

Water quality Data from two Agricultural Drainage Basins in Northwestern Indiana and Northeastern Illinois: I. Lagrangian and Synoptic Data, 1999-2002





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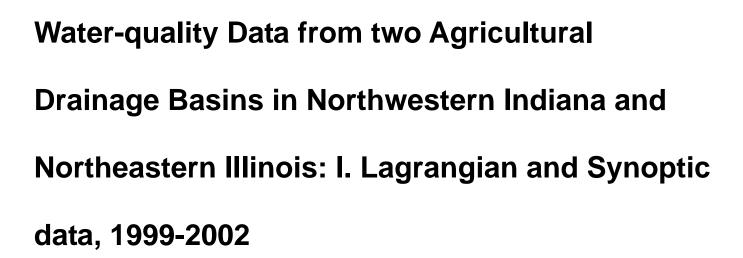
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In cooperation with U.S. Department of Agriculture



By Ronald C. Antweiler, Richard L. Smith, Mary A. Voytek, John-Karl Böhlke, and Kevin D. Richards

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Conversion Factors

Multiply	Ву	To obtain
	Length	
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Volume	
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m ³)
cubic foot (ft ³)	0.02832	cubic meter (m ³)
	Flow rate	
acre-foot per day (acre-ft/d)	0.01427	cubic meter per second (m ³ /s)
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second (m ³ /s)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows: °F=(1.8x°C)+32

ABBREVIATED WATER-QUALITY UNITS

Chemical concentration and water temperature are given only in metric units. Chemical concentration in water is given in milligrams per liter (mg/L), micrograms per liter (μ g/L), or nanograms per liter (ng/L). Milligrams per liter is a unit expressing the solute mass (milligrams) per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One thousand nanograms per liter is equivalent to 1 microgram per liter. For all concentrations in this report, concentrations in milligrams per liter are about the same as for concentrations in parts per million. Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (μ S/cm at 25°C).

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows: °C=(°F-32)/1.8

ABBREVIATED CHEMICAL NAMES

Throughout this report, chemical elements and compounds are abbreviated according to their chemical symbols. The table below describes these.

Symbol	Name	Symbol	Name	Symbol	Name
Al	Aluminum	Н	Hydrogen	Rb	Rubidium
As	Arsenic	HCO ₃	Bicarbonate	Re	Rhenium
В	Boron	Hg	Mercury	S	Sulfur
Ba	Barium	Но	Holmium	SO_4	Sulfate
Be	Beryllium	K	Potassium	Sb	Antimony
Bi	Bismuth	La	Lanthanum	Se	Selenium
Br	Bromine	Li	Lithium	Si	Silicon
С	Carbon	Lu	Lutetium	SiO ₂	Silica
CH_4	Methane	Mg	Magnesium	Sm	Samarium
CO_3	Carbonate	Mn	Manganese	Sr	Strontium
Ca	Calcium	Mo	Molybdenum	Ta	Tantalum
Cd	Cadmium	N	Nitrogen	Tb	Terbium
Ce	Cerium	N ₂ O	Nitrous Oxide	Te	Tellurium
Cl	Chlorine	$NH_{_{4}}$	Ammonium	Th	Thorium
Co	Cobalt	NO,	Nitrite	Ti	Titanium
Cr	Chromium	NO ₃	Nitrate	T1	Thallium
Cs	Cesium	Na	Sodium	Tm	Thulium
Cu	Copper	Nd	Neodymium	U	Uranium
DOC	Dissolved Organic Carbon	Ni	Nickel	V	Vanadium
Dy	Dysprosium	О	Oxygen	W	Tungsten
Er	Erbium	P	Phosphorus	Y	Yttrium
Eu	Europium	PO_4	Phosphate	Yb	Ytterbium
Fe	Iron	Pb	Lead	Zn	Zinc
Gd	Gadolinium	Pr	Praseodymium	Zr	Zirconium

Water-quality Data from two Agricultural

Drainage Basins in Northwestern Indiana and

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Synoptic Data, 1999-2002

By Ronald C. Antweiler, Richard L. Smith, Mary A. Voytek, John-Karl Böhlke and Kevin D. Richards

Abstract

Methods of data collection and results of analyses are presented for Lagrangian and synoptic water-quality data collected from two agricultural drainages, the Iroquois River in northwestern Indiana and Sugar Creek in northwestern Indiana and northeastern Illinois. During six separate sampling trips, in April, June and September 1999, May 2000, September 2001 and April 2002, 152 discrete water samples were collected to characterize the water chemistry over the course of 2 to 4 days on each of these drainages. Data were collected for nutrients, major inorganic constituents, dissolved organic carbon, trace elements, dissolved gases, total bacterial cell counts, chlorophyll-*a* concentrations, and suspended sediment concentrations. In addition, field measurements of streamflow, pH, specific conductance, water temperature, and dissolved oxygen concentration were made during all trips except April 1999.

Introduction

Scientists first recorded hypoxic, or low-oxygen, zones on the continental shelf of the northern Gulf of Mexico in the 1970s (Turner and Allen, 1982), and began systematic assessments of these zones in 1985 (Rabalais and others, 1991). Studies have concluded that nutrient loads carried by the Mississippi River are one of the dominant causes of this hypoxia (Bierman, and others, 1994; Justic and others, 1993, 1995a, b; Rabalais, 1998; Rabalais and others, 1996, 1998; Turner and Rabalais, 1991, 1994). Other studies (for example, Antweiler and others, 1996a; Goolsby and others, 1999; Carey and others, 1999; Battaglin and others, 2001) determined that one of the chief sources of these nutrients within the Mississippi River was agricultural practices in the Upper Mississippi River basin (that part of the Mississippi River basin above the confluence with the Missouri River, herein called UMRB). At the same time, modeling studies (for instance, SPARROW, Smith and others, 1997; and Howarth and others, 1996), based on current

understanding of nutrient processing in streams, indicated that large amounts of nitrate should have been removed by natural denitrification reactions within the surface waters of the UMRB, especially in the headwaters and small streams. These studies indicated that nitrate concentrations in some parts of the UMRB should be lower than they are. The apparent inconsistencies between the model results and observations led the U.S. Geological Survey (USGS) to undertake a study, in cooperation with the U.S. Department of Agriculture, to determine the sources and fate of nitrogen in representative headwaters streams of the UMRB. Accordingly, two small predominantly agricultural drainage basins of the Illinois River (one of the chief tributaries of the Mississippi River in the UMRB) were selected for in-depth intense study. These two basins are a portion of the Iroquois River in western Indiana and one of its tributaries, Sugar Creek, in western Indiana and eastern Illinois (fig. 1). The chief purpose motivating the overall study was to collect data both spatially and temporally along each of the two selected drainages, with an ultimate aim to understanding in-stream processes, particularly involving nitrogen.

Purpose and Scope

This report describes data collected along two specific reaches (one in each drainage basin) during each of six sampling trips in 1999-2002. During these six sampling trips, water samples were collected longitudinally along each reach in either a Lagrangian or synoptic manner over the course of the sampling trip, resulting in a total of 152 samples. The temporal component was examined by collecting diel data during four of these sampling trips at one specific location on each drainage (Antweiler and others, 2005a), and data from a biweekly sampling effort which spanned 28 months (Antweiler and others, 2005b). Additional work, including tracer studies, ground water analyses, and incubation studies also was performed at these sites. This report only describes the data which relate to the spatial component of the study.

Acknowledgments

We wish to thank the contributions of Ronald Knapp and Brad Reinking of the USGS Indiana Water Science Center; George Groschen, Mike Friedel, Steve Stammer and Dave Dupré of the USGS Illinois Water Science Center; JoAnn Holloway, Terry Plowman, Dave Roth, Dale Peart, Howard Taylor, Ryan Bonelli, Julie Kirshstein, Seanne Buckwalter, and Deb Repert of the USGS National Research Program; Charles Patton of the USGS National Water Quality Laboratory; and Andy Laursen of Rutgers University. We also wish to thank George Groschen and Phillip Verplanck for their technical reviews of the manuscript.

Sampling Locations

Figure 1 shows the location of the two study reaches. The Iroquois River reach went from the USGS stream gage near Foresman, Ind. (USGS stream gage number 05524500) – where Indiana State Highway 55 crosses the river approximately 5 kilometers east of Brook, Ind. – to the Newton County (Ind.) Fairgrounds bridge crossing approximately 6 kilometers north of Kentland, Ind. This reach spanned approximately 21 kilometers of the river and consisted of seven sampling sites, which were (more or less) evenly spaced (fig. 2). Along this reach, there are no perennial surface water additions to the river (that is, tributaries) although during the spring runoff there are numerous ditches and pipes that drain into it. The sampling sites were established where bridges crossed the river, mainly because of accessibility and sampling logistics. Detailed descriptions of the location of the sampling sites can be found in table 1. Figure 3 shows the Iroquois River at two of the sampling sites in April 2002, during high flow.

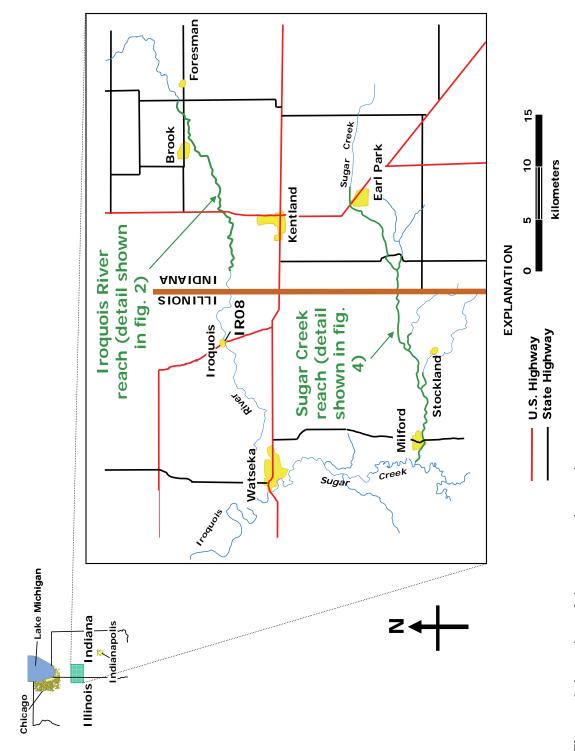


Figure 1. Location of the two study reaches

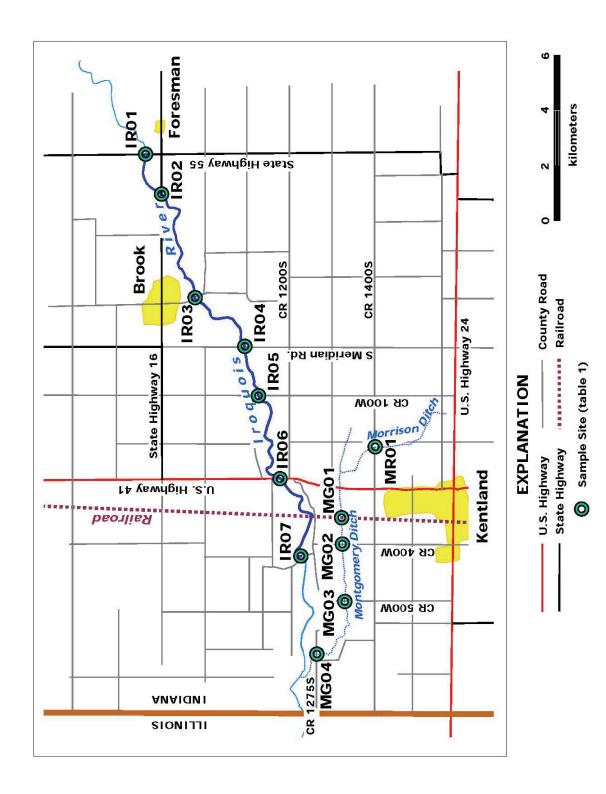


Figure 2. Location of the sampling sites in the Iroquois River reach.





Figure 1. Photographs of the Iroquois River in April 2002. (*A*) View looking downriver at IR01, State highway 55 bridge, near Foresman, Ind. Channel is about 40 meters wide; (*B*) View looking downriver at IR07, Newton County (Ind.) Fairgrounds bridge. Channel is about 50 meters wide.

The Sugar Creek study went from the CR 400W bridge crossing in Benton County, Ind., approximately 2 kilometers northeast of Earl Park, Ind. to just above (approximately 100 meters) the confluence of Mud Creek 3, about 2 kilometers west of Milford, Ill. This reach spanned approximately 38 kilometers of the creek and consisted of 10 sampling sites (fig. 4). Each of the sampling sites except the last occurred at bridge crossings. Two perennial tributaries enter the creek along this reach and each was sampled. Unfortunately, both of these tributaries – along with the tributary just beyond the reach - were named Mud Creek. Thus, there are three Mud Creeks which enter Sugar Creek within the span of 30 kilometers. For clarity, the first Mud Creek, which enters Sugar Creek approximately 2 kilometers east of the Illinois-Indiana state line, is referred to as Mud Creek 1; the second Mud Creek, which enters Sugar Creek about 5 kilometers west of the state line, is referred to as Mud Creek 2. The third Mud Creek, which enters Sugar Creek beyond the reach, is referred to as Mud Creek 3. Each of the first two Mud Creeks was sampled as closely as possible to its confluence, but Mud Creek 3 was not sampled. In addition, a large (unnamed) tributary (SCT3), that contained water even into the summer, was sampled during four of the six trips. This ditch enters Sugar Creek about 4 kilometers to the east of Milford, Ill. Detailed descriptions of the location of the sampling sites can be found in table 1. Figure 5 shows Sugar Creek at two of its sampling sites in April 2002.

In addition to the samples collected at the sites described above, this report also contains the analyses from eleven grab samples collected at seven drainage ditches and tile drain pipes in the vicinity of the Iroquois River and Sugar Creek drainages. Detailed descriptions of the location of these samples can be found in table 2, and their locations can be found on the maps in figures 1-3.

Sampling Times and Types

Data were collected during six sampling trips, three of which were Lagrangian and three of which are designated as synoptic. As used in this report, "Lagrangian sampling" refers to sampling which attempted to follow a parcel of water as it moved downstream. Thus, sampling times were dictated by the velocity of the water in each reach, and occurred whenever it was estimated that the water parcel had arrived at the sampling site (even if this happened in the middle of the night). The three sampling trips which are called "Lagrangian" occurred June 22-26, 1999, September 13-15, 1999, and May 8-11, 2000.

As used in this report, "synoptic sampling" refers to sampling which attempted to collect samples at all sites along a given reach as closely as possible to the same time. Because of logistical reasons, it typically took as many as about 8 hours to collect synoptic samples along each reach. The three sampling trips which are designated as "synoptic" occurred April 20, 1999, September 12-13, 2001, and April 3-4, 2002. The April 1999 sampling trip was actually a reconnaissance trip and therefore consisted of only five sampling sites on the Iroquois River and two on Sugar Creek; in addition, because it was a preliminary assessment, the complete set of samples which was collected during the other trips was not collected during this trip. Table 3 summarizes the sampling times for all of the samples described in this report.

Table 1. Sampling sites

Site Name	Site Location	Latitude	Longitude	Distance, km*	Sampling trip (table 3)
(fig. 2				MIII	(tubic 0)
and 4)					
	IROQUOIS RIVER				
IR01	Indiana Highway 55 bridge at U.S. Geological Survey stream gage (05524500) near Foresman, Ind.	40° 52.20'	87° 18.03'	0.0	All trips
IRO2	Indiana Highway 16 bridge near Brook, Ind.	40° 51.95'	87° 19.39'	2.0	All but April 1999
IR03	Newton Co., Ind., CR 100E bridge, south of Brook, Ind.	40° 51.30'	87° 21.63'	5.9	All trips
IR04	S. Meridian Road bridge, Newton Co., Ind., near Brook, Ind.	40° 51.20'	87° 22.90'	9.4	All but April 1999
IRO5	Newton Co., Ind., CR 100W bridge, near Brook, Ind.	40° 49.93'	87° 24.16′	12.0	All trips
IR06	U.S. Highway 41 bridge, near Kentland, Ind.	40° 49.21'	87° 27.19'	16.5	All but April 1999
IR07	Newton Co., Ind., Fairgrounds bridge, near Kentland, Ind.	40° 49.25'	87° 27.86'	21.1	All trips
	SUGAR CREEK S	SITES			
SC01	Benton Co., Ind., CR 400W bridge, near Earl Park, Ind.	40° 41.91'	87° 24.08'	0.0	All but April 1999
SC02	Benton Co., Ind., CR 600W bridge, near Earl Park, Ind.	40° 40.89'	87° 26.32'	4.5	All but April 1999
SC03	Indiana Highway 71 bridge, near Raub, Ind.	40° 39.63'	87° 29.13'	9.8	All trips
SC04	Stateline Road bridge, on IndIll. Stateline	40° 39.02'	87° 31.61'	14.0	All but April 1999
SC05	Iroquois Co., Ill., CR 3000E bridge, near Stockland, Ill.	40° 38.88'	87° 33.80'	17.7	All but April 1999
SC06	Iroquois Co., Ill., CR 2800E bridge, near Stockland, Ill.	40° 38.11'	87° 35.52'	21.4	All but April 1999
SC07	Iroquois Co., Ill., CR 900N bridge, near Stockland, Ill.	40° 37.59'	87° 38.05'	26.9	All but April 1999
SC08	Iroquois Co., Ill., CR 2440E bridge, near Milford, Ill.	40° 37.18'	87° 39.75'	30.1	All trips
SC09	Illinois Highway 1 bridge, south of Milford, Ill.	40° 37.30'	87° 41.74'	34.4	All but April 1999
SC10	30 m. upstream from Mud Creek 3 confluence near Milford, Ill.	40° 37.78'	87° 43.56'	37.8	All but April 1999 and April 2002
	SUGAR CREEK TRIBU	TARY SITES	•		=-
SCT1	Mud Creek 1 at Indiana Highway 71 bridge, near Raub, Ind.	40° 38.74'	87° 29.06'	11.7	All but April 1999
SCT2	Mud Creek 2 300 m. upstream from confluence with Sugar Creek, near Stockland, Ill.	40° 38.24'	87° 34.89'	21.2	All but April 1999
SCT3	Unnamed tributary at Iroquois Co., Ill., CR 900N bridge, near Stockland, Ill.	40° 37.23'	87° 37.72'	28.5	All but April 1999 and September 1999

^{*} Refers to the distance in kilometers along the river from the U.S. Geological Survey stream gage (05524500) near Foresman, Ind., for the Iroquois River; for Sugar Creek, the distance from the first sampling site near Earl Park, Ind.; for the Sugar Creek tributaries, the distance from the confluence to the tributary to the first Sugar Creek site near Earl Park, Ind.

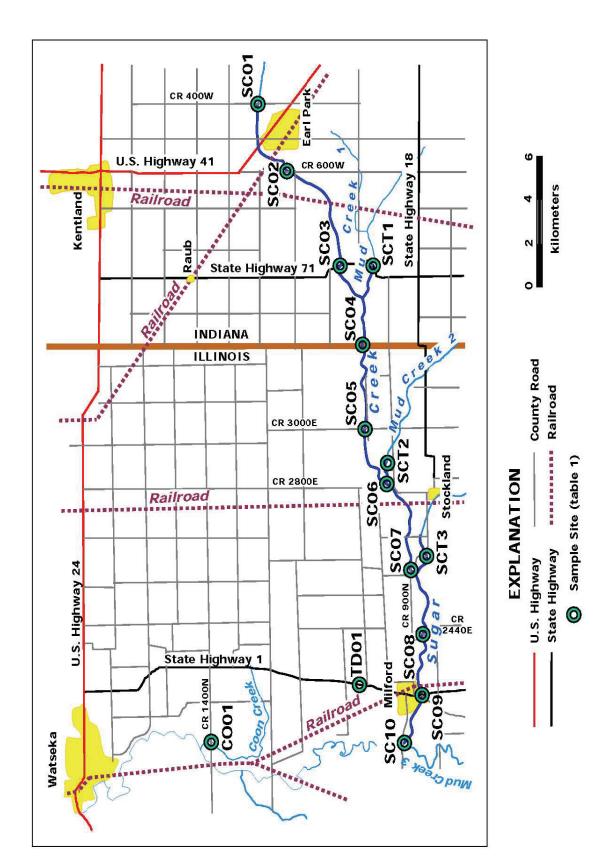


Figure 4. Location of sampling sites in the Sugar Creek reach.

A.



B.



Figure 5. Photographs of Sugar Creek in April 2002. (A) View looking downriver at SC01, County Road 400W bridge, near Earl Park, Ind. Channel was about 5 meters wide; (B) View looking upriver at SC07, County Road 900N bridge, near Stockland, Ill. Channel was about 25 meters wide.

Table 2. Miscellaneous sampling sites

Site	Site and Location	Latitude	Longitude	Distance,	Sampling Trip					
Name				km*	(table 3)					
	DITCH SAMPLES									
MR01	Morrison Ditch at Newton Co., Ind., CR 1400S bridge,	40° 47.67'	87° 25.31'	9.4	April 1999					
	near Kentland, Ind.									
MG01	Montgomery Ditch at Railroad bridge near Kentland,	40° 48.30'	87° 26.93'	6.2	April 2002					
	Ind.									
MG02	Montgomery Ditch at Newton Co., Ind., CR 400W	40° 48.23'	87° 27.50'	5.4	April 2002					
	bridge, near Kentland, Ind.									
MG03	Montgomery Ditch at Newton Co., Ind., CR 500W	40° 48.35'	87° 28.66′	3.8	April 2002					
	bridge, near Kentland, Ind.									
MG04	, , , , , , , , , , , , , , , , , , ,	40° 48.80′	87° 30.12'	1.0	April 1999,					
	1275S bridge, near Kentland, Ind.				April 2002					
	TILE DRAIN SAI	MPLES								
ID01	Ditch draining into the Iroquois River from the south at	40° 52.20'	87° 18.03'	na	April 2002					
	the IR01 site, near Foresman, Ind.									
ID02	Ditch draining into the Iroquois River from the north at	40° 49.25'	87° 27.86′	na	April 2002					
	the IR07 site, near Kentland, Ind.									
TD01	Tile drain emptying into ditch draining (eventually)	40° 39.00'	87° 41.68'	na	April 1999					
	into Sugar Creek at Illinois Highway 1 culvert,									
	approximately 2 km north of Milford, Ill.									
TD02	Tile Drainage from drain pipe on north side of	40° 48.23'	87° 27.50'	na	April 2002					
	Montgomery Ditch at the MG02 site, near Kentland,									
	Ind.									
	OTHER STREAMS A									
IR08	Iroquois River at Iroquois gage at U.S. Highway 52	40° 49.35'	87° 34.90'	33.1	April 1999					
	bridge, near Iroquois, Ill.									
CO01	Coon Creek near mouth at Iroquois Co., Ill., 1400N	40° 42.89'	87° 43.53'	na	April 1999					
	bridge, near Watseka, Ill.									

^{*} Refers to the distance in kilometers to the confluence of Montgomery Ditch and the Iroquois River (Montgomery Ditch enters the Iroquois River 26.3 kilometers downriver from the U.S. Geological Survey stream gage (05524500) near Foresman, Ind., at IRO1; Morrison Ditch empties into Montgomery Ditch) for MRO1 and MGO1-MGO4; for IRO8, refers to the distance in kilometers along the Iroquois River from the USGS gage near Foresman, Ind. For the others, distance is irrelevant and is designated "na" ("not applicable").

Table 3. Sampling times and type of sampling trip

["grabs" and "composities" are described in the section entitled "Methods of Collection"]

Sampling Trip and Type	Iroquois River	Sugar Creek	Miscellaneous
	4/20/99 @ 13:00 to	4/20/99 @ 16:25 to	4/20/99 @ 9:50 to
April 1999	4/20/99 @ 14:50	4/20/99 @ 14:50 4/20/99 @ 17:00	
synoptic	5 grabs	2 grabs	4 grabs
I 1000	6/25/99 @ 13:15 to	6/22/99 @ 17:00 to	
June 1999	6/26/99 @ 17:30	6/24/99 @ 14:10	(None)
Lagrangian	7 composites, 10 grabs	13 composites, 13 grabs	
C	9/13/99 @ 16:15 to	9/13/99 @ 18:30 to	
September 1999	9/15/99 @ 20:40	9/15/99 @ 1:20	(None)
Lagrangian	7 grabs	12 grabs	
M 2000	5/9/00 @ 14:20 to	5/8/00 @ 13:20 to	
May 2000	5/11/00 @ 0:30	5/9/00 @ 17:15	(None)
Lagrangian	7 composites, 7 grabs	13 grabs	
C	9/13/01 @ 8:30 to	9/12/01 @ 9:20 to	
September 2001	9/13/01 @ 15:20	9/12/01 @ 19:40	(None)
synoptic	7 grabs	13 grabs	
A:1 2002	4/3/02 @ 9:50 to	4/4/02 @ 8:30 to	4/3/02 @ 12:30 to
April 2002	4/3/02 @ 16:30	4/4/02 @ 13:40	4/3/02 @ 18:10
synoptic	13 grabs	12 grabs	7 grabs

Methods of Collection

Samples were collected at twenty sites on the two reaches, seven on the Iroquois River, ten on Sugar Creek, and three on separate tributaries of Sugar Creek (table 1). Concurrent with the collection of samples for analysis, streamflow measurements were made at each site using standard USGS protocols (Rantz and others, 1982). This involved selecting between 15 and 25 vertical measurement locations across the channel, measuring the water depth and average velocity at each vertical, and integrating over all verticals in a section to obtain the total streamflow. During the April 1999 trip, streamflow measurements were not made; at this time, water discharge on the Iroquois River was estimated at the sampling sites by interpolating between instantaneous (and automatic) measurements made at two USGS stream gaging stations, one upstream (the Iroquois River near Foresman, Ind., USGS stream gage number 05524500) and the other downstream (the Iroquois River at Iroquois, Ill., USGS stream gage number 05525000).

In addition to streamflow, field measurements of pH, specific conductance, dissolved oxygen concentration, and water temperature were made and recorded. The pH, specific conductance, dissolved oxygen concentration, and water temperature were all measured using a YSI Model 600XL-4 parameter instrument which was calibrated daily against known standards according to standard USGS protocols (Wilde and Radtke, 1998). There were two main types of samples collected: the composite sample and the grab sample.

Composite Samples

"Composite" samples were depth- and width-integrated, collected either with a D77 sampler, or, if the river was wadeable, with a hand-held DH-81 sampler (Horowitz and others, 1994; Wilde and others, 1999). Water samples were collected at five to seven equally-spaced vertical intervals using a collapsible Teflon bag. The collection vessel had a Teflon nozzle and was oriented to always be facing upstream. Transit rates were held constant during the collection of a sample (Moody and Meade, 1992; Kelly and Taylor, 1996). The Teflon bags were either 1-L or 2-L (depending on the type of sampler used) and were emptied into a clean 8-L Teflon-coated churn. The Teflon bags were filled a sufficient number of times to collect about 6-L of water in the churn. Samples collected in this manner represent an integrated "snapshot" of the river at the time of collection, both for dissolved and particulate materials.

Grab Samples

"Grab" samples were normally collected into a pre-cleaned 2-L Teflon bottle by going to the center of flow of the channel and lowering the bottle into the water. The bottle was rinsed with river water, then filled and emptied into a clean 8-L churn three times to yield a total of 6-L of water. Grab samples only represent a true snapshot of the river if the water at the time of collection is well-mixed. In general, this rarely occurs in large rivers, especially for particulates (Meade, 1985; Moody and Meade, 1992); however, grab samples collected from the center of flow are often representative of the chemistry of the stream at that point in small watersheds and especially for dissolved constituents.

The first sampling trip (April 1999) was a reconnaissance, and all samples collected at that time were grab samples. During the second sampling trip (June 1999), both composite and grab samples were collected at all sites on both reaches. During the third trip (September 1999), composite samples were collected from the Iroquois River and grab samples were collected from

Sugar Creek. On the fourth trip (May 2000), composite and grab samples were each taken at all sites on the Iroquois River, and only grab samples were collected at all sites on Sugar Creek. Only grab samples were collected during the fifth and sixth trips (September 2001 and April 2002). In addition, on the April 2002 trip, at selected sites, grab samples were collected across the entire channel and in the backwater areas (in addition to collecting at the center of flow). These samples were collected to assess the cross-channel variability.

Additional samples were collected for dissolved gas analyses during four of the six sampling trips (all except the reconnaissance trip – April 1999 – and the last trip, April 2002). Samples collected for dissolved nitrous oxide and methane (samples for methane analysis only were collected during the September 2001 synoptic trip) were collected by one of two methods. Samples labeled as composite were collected from three equally-spaced vertical intervals (as above) using a peristaltic pump. The pump tubing was attached to a wading rod and water samples were slowly pumped from the top, middle, and bottom of each depth interval (or two depths for shallow locations). For grab samples, which were collected in duplicate or triplicate, water was obtained from the center of flow in a bucket. All water samples were collected in plastic syringes, taking care to exclude air bubbles. After filling, a needle was placed on the syringe and 20 mL injected into 30-mL serum bottles that had been fitted with thick butyl rubber stoppers and aluminum crimps and which contained 0.2 mL 12.5 normal sodium hydroxide and a helium (He) headspace.

Processing of Samples

After either grab or composite samples were collected into the cleaned churn, the churn was transported immediately from the sample site to the field laboratory (located in Kentland, Ind., less than 30 minutes away from all sample sites, fig. 2 and 3). Upon arrival at the field lab, the 6 liters were churned and subsampled by the following method. First, a 250-mL polyethylene bottle was filled for the determination of total suspended sediment. This sample was chilled after subsampling until analysis. Second, a 19-mL aliquot was subsampled by decanting from the churn spigot into a 20-mL glass bottle pre-dosed with 1 mL of formalin for the determination of total bacterial count. This sample was stored at room temperature for as many as 4 days and thereafter at 4°C until analysis.

Third, a 1-L pre-cleaned Teflon bottle was filled and filtered through a 47-mm diameter, 0.4-µm nominal pore-size glass fiber filter (GFF). The volume of water passing through the filter was recorded. The filtrate was disposed, and the GFF was frozen for chlorophyll-*a* analysis.

Fourth, a 2-L Teflon bottle was filled from the churn. The entire contents of this bottle were filtered through a 0.2-µm Gelman spiral-cap capsule filter. Out of these 2 liters, the first 400-500 mL of filtrate were discarded to acclimate the filter. Then, the following filtered aliquots were collected into pre-cleaned bottles: (1) 120 mL for trace metal analysis; this bottle was acidified with 1 mL of doubly-distilled trace-metal grade nitric acid; (2) 120 mL for mercury analysis; this bottle was preserved with 5 mL of a potassium dichromate-nitric acid solution; (3) 120 mL for nutrient analyses; this aliquot was refrigerated to 4°C immediately after filtration; (4) 60 mL for anions analysis; this aliquot was refrigerated to 4°C immediately after filtration; (5) 60 mL for dissolved organic carbon (DOC) analysis; as with anions and nutrients, this aliquot was refrigerated to 4°C after filtration.

Methods of Analysis

All samples were analyzed at USGS laboratories, the National Research Program (NRP) laboratories located in Boulder, Colo., the NRP laboratories located in Reston, Vir., and the National Water Quality Laboratories (NWQL) in Lakewood, Colo. Table 4 summarizes the methods of analysis, and also includes the method detection limits for each chemical constituent (where applicable).

Nutrients

Dissolved nitrate, nitrite, ammonium, and phosphate were determined at the USGS NRP laboratories in Boulder, Colo. in duplicate or triplicate colorimetrically on an air-segmented continuous-flow Alpkem RFA 300 system according to the methods of Antweiler and others (1996b). Nitrate plus nitrite was determined colorimetrically at 543 nanometers (nm) by diazotization with sulfanilamide and reaction with N-(1-naphyl) ethylene diamine (Greiss reaction) after reduction to nitrite with cadmium metal. Nitrite was determined by the same method without cadmium reduction. Nitrate was then computed by difference. Ammonium ion was determined colorimetrically at 660 nm by the salicylic acid analog of the indophenol blue method. Phosphate was determined at 880 nm by the phosphoantimonyl molybdenum-blue procedure. Every eight to ten determinations, standard reference samples were analyzed to assess the quality of the analyses.

Dissolved Kjeldahl nitrogen was determined at the USGS NWQL in Lakewood, Colo. by the method of Patton and Truitt (2000). In this method, organic nitrogen is converted to ammonium ions at a temperature of 370 °C with sulfuric acid, potassium sulfate and mercury (II). Therefore, in this report, Kjeldahl nitrogen refers to ammonium ions plus organic nitrogen (Patton and Truitt, 2000). Due to cost considerations, not all samples were submitted for Kjeldahl nitrogen analysis.

Total phosphorus was determined at the USGS NRP laboratories in Boulder, Colo. by inductively-coupled atomic emission analysis at 213.617 and 214.914 nm on a Perkin Elmer Optima 3300DV, multichannel emission spectrometer, using the axial view mode. Details of the system are given in Mitko and Bebek (1999, 2000).

Anions and DOC

Dissolved chloride, nitrate and sulfate were determined at the USGS NRP laboratories in Boulder, Colo. by ion chromatography on a Dionex 2002i/SP series ion chromatograph, using a carbonate-bicarbonate eluent buffer. Samples were (in general) analyzed only once, but each analysis run had at least 20 percent quality-control and standard reference samples to assess both accuracy and precision. Details of the analytical techniques can be found in Brinton and others (1996).

Total alkalinity was determined in the USGS NRP Boulder, Colo. laboratory by titration with 0.1 M sulfuric acid to a fixed point endpoint according to the techniques of Kramer (1982) using a Gran's titration calculation. Standard reference water samples were analyzed at least 20 percent of the time to assess accuracy and precision.

Table 4. Detection limits and methodologies used for the determination of chemical constituents in this study.

[mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; μ g/L, micrograms per liter; μ g C/L, micrograms per liter as carbon; ng/L, nanograms per liter; ICPMS, Inductively-coupled plasma-atomic emission spectrometry; GC, gas chromatography; IR, infrared; IC, ion chromatography; CVAFS, cold-vapor atomic fluorescence spectrometry]

	Method				Method		
Chemical	Detection			Chemical	Detection		
constituent	Limit	Units	Methodology	constituent	Limit	Units	Methodology
Al	0.1	μg/L	ICPMS	NH_4	0.007	mg N/L	Colorimetry
As	0.03	μg/L	ICPMS	NO_2	0.002	mg N/L	Colorimetry
В	1	μg/L	ICPMS/ICPAES	NO_3	0.02	mg N/L	Colorimetry/IC
Ba	0.01	μg/L	ICPMS/ICPAES	Na	0.02	mg/L	ICPAES
Be	0.008	μg/L	ICPMS	Nd	0.0007	μg/L	ICPMS
Bi	0.001	μg/L	ICPMS	Ni	0.4	μg/L	ICPMS
Br	1	μg/L	ICPMS	P	5	μg/L	ICPMS/ICPAES
CH_4	0.1	μg C/L	GC	PO_4	0.02	mg P/L	Colorimetry
Ca	0.01	mg/L	ICPAES	Pb	0.005	μg/L	ICPMS
Cd	0.002	μg/L	ICPMS	Pr	0.0002	μg/L	ICPMS
Ce	0.0003	μg/L	ICPMS	Rb	0.001	μg/L	ICPMS
Cl	0.2	mg/L	IC	Re	0.0003	μg/L	ICPMS
Co	0.005	μg/L	ICPMS	SO_4	0.5	mg/L	IC
Cr	0.1	μg/L	ICPMS	Sb	0.001	μg/L	ICPMS
Cs	0.001	μg/L	ICPMS	Se	0.1	μg/L	ICPMS
Cu	0.03	μg/L	ICPMS	SiO_2	0.02	mg/L	ICPAES
DOC	0.2	mg C/L	IR	Sm	0.0007	μg/L	ICPMS
Dy	0.0005	μg/L	ICPMS	Sr	0.03	μg/L	ICPMS/ICPAES
Er	0.0006	μg/L	ICPMS	Ta	0.001	μg/L	ICPMS
Eu	0.0003	μg/L	ICPMS	Tb	0.0002	μg/L	ICPMS
Fe	0.5	μg/L	ICPAES	Te	0.01	μg/L	ICPMS
Gd	0.0005	μg/L	ICPMS	Th	0.0002	μg/L	ICPMS
Hg	0.4	ng/L	CVAFS	Ti	0.1	μg/L	ICPMS/ICPAES
Но	0.0001	μg/L	ICPMS	Tl	0.005	μg/L	ICPMS
K	0.003	mg/L	ICPMS/ICPAES	Tm	0.0002	μg/L	ICPMS
Kjeldahl N	0.1	mg N/L	Colorimetry	U	0.001	μg/L	ICPMS
La	0.0004	μg/L	ICPMS	V	0.1	μg/L	ICPMS/ICPAES
Li	0.01	μg/L	ICPMS	W	0.002	μg/L	ICPMS
Lu	0.0001	μg/L	ICPMS	Y	0.0003	μg/L	ICPMS
Mg	0.008	mg/L	ICPAES	Yb	0.0004	μg/L	ICPMS
Mn	0.06	μg/L	ICPMS/ICPAES	Zn	0.1	μg/L	ICPMS/ICPAES
Mo	0.04	μg/L	ICPMS	Zr	0.001	μg/L	ICPMS
N_2O	0.0003	mg N/L	GC				

Dissolved organic and inorganic carbon (DOC and DIC) were determined at the USGS NRP laboratories in Boulder, Colo. on an O.I. Analytical Model 700 carbon analyzer. First, DIC was determined by acidification of the sample with phosphoric acid and subsequent purgation of the resulting carbon dioxide gas by nitrogen. This was then measured by an infrared absorption spectrophotometric technique (Wershaw and others, 1983). Following removal of the inorganic carbon, the DOC was determined by oxidation with potassium persulfate and acidification to carbon dioxide.

Major Cations, Silica and Trace Elements

Elements present at concentration levels in the milligram per liter range, including Ca, K, Mg, Na, and SiO₂ and some selected elements, such as Fe and P, were determined at the USGS NRP laboratories in Boulder, Colo. Samples were analyzed in triplicate by inductively coupled plasma-atomic emission spectrometric (ICP-AES) techniques utilizing a Perkin Elmer Optima 3300DV, multichannel emission spectrometer. Use of the dual-view (radial and axial) optical configuration provided optimal sensitivity for various elements regardless of concentration. A general description of the analysis conditions and procedures are reported by Garbarino and Taylor (1979). Details of the operational conditions are described by Mitko and Bebek (1999, 2000). All analysis runs contained at least 20 percent quality-control standard reference samples to assess accuracy. Precision was assessed by the fact that all samples were analyzed in triplicate.

Trace elements (excluding Hg) were analyzed at the USGS NRP laboratories in Boulder, Colo. in triplicate on undiluted field preserved samples with a Perkin Elmer Elan Model 6000, inductively-coupled plasma-mass spectrometer (ICP-MS). Aerosols of HNO₃-acidified aqueous samples were introduced into the spectrometer with a cone-spray pneumatic nebulizer. Multiple internal standards (indium, iridium and rhodium), covering the mass range of measured analytical isotopes were used to normalize the system for drift. Details of the specific analysis techniques, procedures, and instrumental settings are described elsewhere (Garbarino and Taylor, 1996; Taylor, 2001). All analysis runs contained at least 30 percent quality-control and standard reference samples to assess accuracy.

Trace concentration levels of total dissolved Hg (all forms) were measured in triplicate at the USGS NRP laboratories in Boulder, Colo. using an automated cold-vapor atomic fluorescence spectrometric method utilizing a PS Analytical Millennium System mercury analyzer. Details of the method have been described previously by Roth (1994) and Roth and others (2001). Elemental Hg vapor was produced by chemically reducing Hg in the sample with excess stannous chloride. The resulting vapor was transported to the detector with a stream of argon gas. All analysis runs contained at least 20 percent quality-control and standard reference samples to assess accuracy.

Dissolved Gases

Dissolved gases were measured at the USGS NRP laboratories in Boulder, Colo. Nitrous oxide was measured as described by Brooks and others (1992) with an HNU model GC 301 Gas Chromatograph equipped with an electron capture detector. Methane was measured with a Shimadzu model GC 17A Gas Chromatograph fitted with a flame ionization detector and a 2.44 m Porapak N (80/100 mesh) column using He carrier gas at 100 °C. Aqueous concentrations of nitrous oxide and methane were calculated using Bunsen solubility coefficients (Weiss and Price, 1980; Yamamoto and others, 1976).

Total Bacterial Cell Counts

Total bacterial cell counts were made at the USGS NRP laboratories in Reston, Vir. according to the method of Porter and Feig (1980) and are summarized here. A black Nucleopore 25-mm diameter, 0.2-µm nominal pore-size polycarbonate membrane filter was placed on top of a damp 0.45-µm Millipore support filter mounted on a glass filter frit with filter tower attached. One mL of the sample was added to the filter tower and DAPI (4'6-diamidino-2-phenylindole) was added to 0.01 µg/mL and incubated for 5 minutes at room temperature. Gentle vacuum was applied to concentrate the sample onto the filter. The filter was washed twice with sterile salt solution and the filter was removed and placed damp onto a microscope slide to which one drop of low fluorescing immersion oil had been added. The filter was covered with a glass coverslip which also contained one drop of immersion oil, and at least 8 fields in the range of 40 cells/field were counted at 100X magnification (oil immersion) on a Zeiss epifluorescent microscope fitted with an ocular grid of known area. If the cell concentration was too high for optimal counting on the microscope a dilution of sample was performed, and counted as described.

Chlorophyll-a

Chlorophyll-a analyses were performed at the USGS NRP laboratories in Reston, Vir. Glass fiber filters, which were frozen immediately following sample processing, were thawed in low light and placed in a glass tube tissue grinder. All processing was performed at low light. Four mL of 90 percent acetone (HPLC grade) was added, and the filters were pulverized in the tissue grinder using a pestle and keeping the grinder on ice at all times. The filter/acetone mixture was poured off into a 15 mL centrifuge tube, and the grinder was rinsed with 2 mL 90 percent acetone, which also was added to the centrifuge tube. The sample was incubated in the dark at 4 °C for 16-20 hours. Sample tubes were brought to room temperature and centrifuged at 1,000g for 5 minutes to clarify the solution. The solution was poured into a glass tube and the fluorescence was measured using a Turner Model 10 fluorometer equipped with excitation filter 436FS10 and emission filter 680FS10, specific for chlorophyll-a. Complete details of the procedures are given in Arar and Collins (1997).

Suspended Sediment

Suspended sediment concentration determinations were made at the USGS NRP laboratories in Boulder, Colo. The filled sample bottle was first weighed. Then, a new pre-weighed 47-mm Whatman 41 paper filter was placed on a filter stand and the sample was filtered through it. The filter was oven-dried overnight at 95 °C, allowed to cool, and re-weighed. The empty sample bottle was reweighed as well. The suspended sediment concentration was calculated as the difference in weights of the filter divided by the difference in weights of the sample bottle (converted to units of milligrams per liter).

Quality Control/Quality Assurance

Accuracy and Precision

The quality of the data for trace metals, major cations and anions, and nutrients was assessed by a vigorous program involving a large number of quality-control (QC) standards, which were analyzed as unknowns during the analysis of all samples collected during the study. The frequency of analysis of these QC standards was variable depending upon the methodology used, but was always at least 20 percent of the total number of samples collected. Tables A1-A6 in Appendix A contain the results of these analyses, with each table representing a distinct sampling trip. The

columns of these tables are ordered alphabetically for each element or compound for which standards existed. The italicized rows in each table list the published "Most Probable Values" (MPVs) of each standard; the non-italicized rows list the median values for each analysis run, along with the number of times that standard was analyzed during the run. Elements or compounds for which no MPV existed are displayed in the tables with "na" ("not applicable").

The large amount of data in these tables cannot be easily reduced, but figures 6-8 display representative portions of them, and indicate the agreement between the observed concentrations and their respective MPVs for a number of elements and compounds. These figures and the data in the tables suggest that the data collected during the study are appropriate for the objectives of the study.

Field Blanks

Field blank samples were collected during the June 1999, September 1999, and May 2000 sampling trips to evaluate whether field procedures could have introduced contamination into the samples. These data are presented in table A7 in Appendix A. During the June 1999 trip, three sets of field blanks were taken: (1) a source deionized (DI) water sample from a Millipore corporation MilliQ Plus deionized water system. This source water was used to rinse all equipment between samples; (2) a churn blank, in which source DI water was poured into the churn used for sample collection, churned and sampled; and (3) a filter blank, in which source DI water was passed through the 0.2-µm Gelman filter and sampled. Blank samples collected during the September 1999 trip included these three samples, but also included a sample of water purchased from a local market which claimed to be deionized water and which was used to pre-rinse equipment before a final rinse was done with the MilliQ DI water. In addition, a "process" blank sample was taken, in which MilliQ DI water was poured into a churn, churned, collected into a holding bottle and subsequently filtered through a 0.2-µm Gelman filter. The blank samples taken during the May 2000 trip additionally included a holding bottle blank, in which source DI was poured into one of the bottles used transfer samples from the churn to the Gelman filter.

Lagrangian and Synoptic Water-Quality Results

Tables A8-A42 in Appendix A contain the results of all analyses for the Lagrangian and synoptic samplings. The general structure of the tables is as follows. All results from the April 1999 reconnaissance are presented first (tables A8-A10). Next, all the results from the June 1999 sampling trip are presented (tables A11-A19), followed by September 1999 (tables A20-A24), May 2000 (tables A25-A29), September 2001 (tables AQ30-A34) and finally April 2002 (tables A35-A38). For each sampling trip, the tables are ordered so that Iroquois River data are presented first, followed by Sugar Creek data and finally by the Sugar Creek tributaries. In general, nutrient, DOC, dissolved gases and suspended sediment data are presented first, followed by major inorganic constituents, trace elements, field measurements, and finally, total bacterial cell counts and chlorophyll-*a* concentrations. The miscellaneous data collected from various ditches, tile drains, and other sites are presented in tables A39-A42. The order of presentation of data by sample site in these tables is similar to that described above.

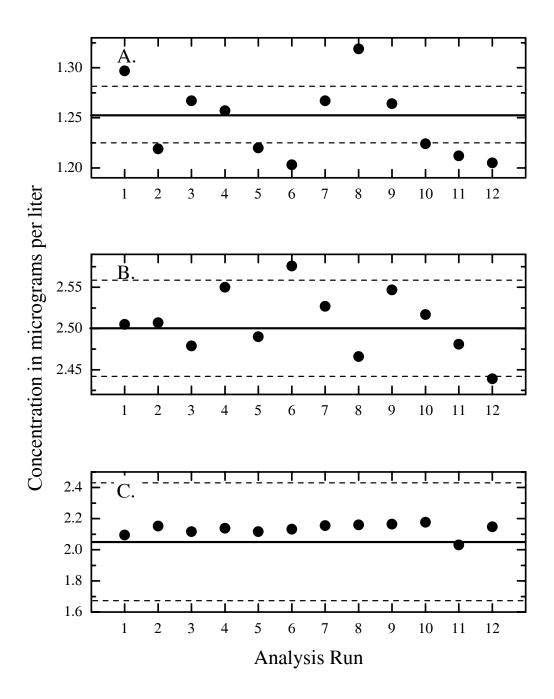


Figure 2. Quality-control charts of the NIST1643d standard (1:10 dilution) for each analysis run of the entire study. The solid points represent the average value of the standard for that analysis run. The solid line is the certified value, and the dashed lines represent the published uncertainty (National Institute of Standards and Technology, 1995). (A) Beryllium; (B) Cobalt; (C) Copper

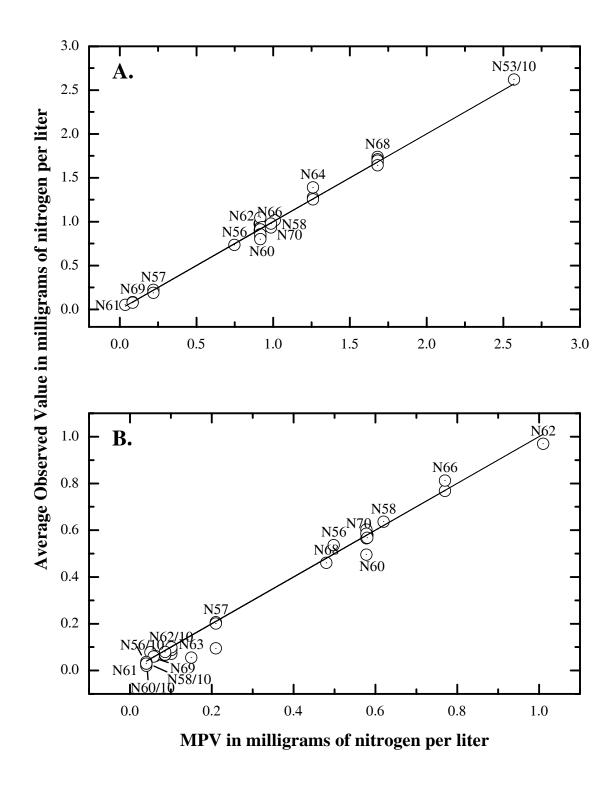


Figure 3. Most Probable Values (MPVs) and average observed concentrations for all nutrient standard reference materials used in this study. (A) Nitrate; (B) Ammonium

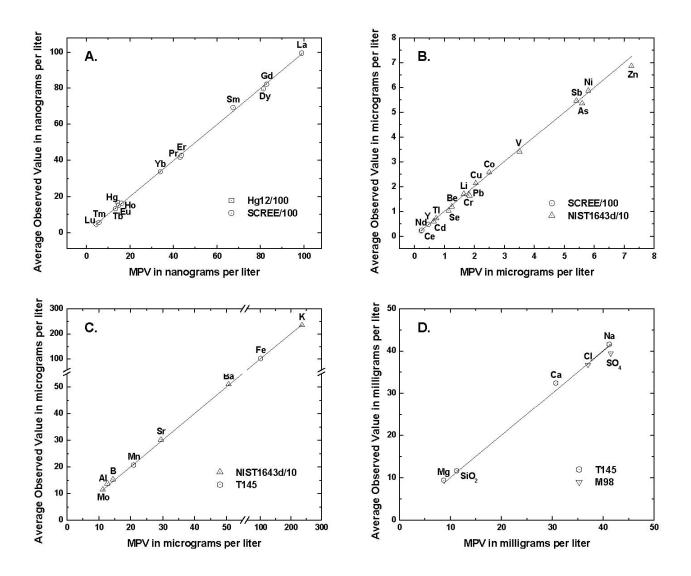


Figure 8. Most Probable Values (MPVs) and average observed concentrations for the first analysis run of the September 1999 data. The line is the line of perfect agreement between the MPV and the observed value. (A) Rare-earth elements and mercury (Hg); (B) Trace elements; (C) Lower concentration elements; (D) Major constituents.

The ranges of concentrations of selected major constituents can be seen in figure 9A. Chloride concentrations in the Iroquois River ranged from 23 to 55 mg/L, with highest values occurring in September 1999 and 2001. Concentrations of chloride in Sugar Creek tended to be lower, ranging from 16 to 26 mg/L. Bicarbonate concentrations for both drainages ranged from 35 to 63 mg C/L, and sulfate (not pictured in figure 9A) ranged from about 40 to 120 mg/L. Sodium concentrations in both drainages were highest during the September 1999 and 2001 sampling trips, and, relative to calcium (not pictured in figure 9A) and magnesium tended to have lower concentrations.

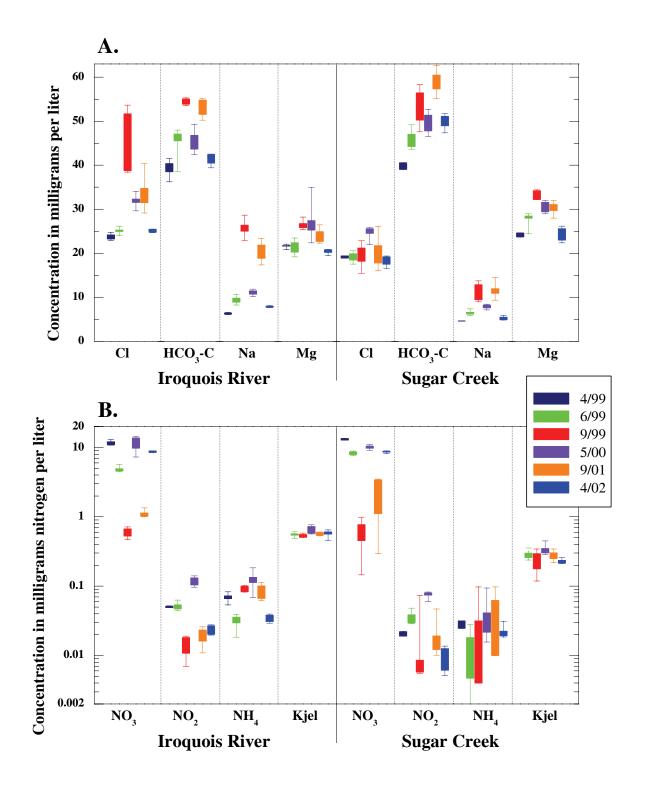


Figure 5. Box plots showing the concentration ranges of data for the Iroquois River and Sugar Creek for (A) Major cations and anions, expressed in milligrams per liter: chloride (Cl), bicarbonate (as carbon, HCO₃-C), sodium (Na) and magnesium (Mg); (B) Nutrients, expressed in milligrams nitrogen per liter: nitrate (NO₃), nitrite (NO₂), ammonium (NH₄), and Kjeldahl nitrogen (Kjel). Colors of the bars represent the sampling trip.

Selected nutrient concentrations (plotted on a logarithmic axis) are graphed in figure 9B. In contrast to chloride and sodium, lowest concentrations of nitrate occurred during September 1999 and 2001 on both drainages. During the other sampling trips, nitrate concentrations were far greater than all other nitrogen species, ranging from 4 to 13 mg N/L on both drainages. Kjeldahl nitrogen was very consistent, ranging from 0.2 to 0.6 mg N/L for all data, and showing little difference between sampling trips. Nitrite and ammonium concentrations were always less than 0.2 mg N/L for both drainages.

Trace element concentrations tended to be low. For example, arsenic concentrations ranged from 0.3 to 2.2 μ g/L, copper concentrations from 0.3 to 1.8 μ g/L and antimony concentrations from 0.06 to 0.17 μ g/L.

Chlorophyll-a concentrations ranged from 4.0 to 13.6 μ g/L in the Iroquois River and from 1.7 to 10.5 μ g/L in Sugar Creek. Sugar Creek concentrations tended to be lower than the Iroquois River.

Summary

This report contains the results of analyses made for Lagrangian and synoptic sampling during six trips ranging from April 1999 to April 2002. The Lagrangian sampling occurred June 22-26, 1999, September 13-15, 1999, and May 8-11, 2000. The synoptic sampling occurred April 20, 1999, September 12-13, 2001, and April 3-4, 2002. For each trip, samples were taken on two study reaches, one spanning 38 kilometers along Sugar Creek in northwestern Indiana and northeastern Illinois, and the other spanning 21 kilometers on the Iroquois River in northwestern Indiana. Measured field parameters included streamflow, pH, specific conductance, water temperature and dissolved oxygen concentration. Methods and results are reported for major inorganic constituents, trace elements, nutrients, dissolved organic carbon, dissolved gases, suspended sediments, total bacterial cell counts, and chlorophyll-a. This report also contains the results of an extensive quality control/quality assurance program administered to assess the accuracy and precision of the sample data.

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Appendix A

Table A1. Quality control data for the April 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, na, not applicable]

Analysis Run	Standard ¹	Al	As	В	Ba		Cd		Cr	Cu	Hg				Mo
		ug/L	µg/L	µg/L	µg/L		hg/L		ug/L	µg/L	ng/L				µg/L
	Hg7/100	na	na	na	na		na		na	na	2.2				na
H99519SA	Hg7/100(6)	na	na	na	na	na	na	na	na	na	2.3	na	na	na	na
	Hg12/100	na	na	na	na		na		na	na	14.4				na
H99519SA	Hg12/100 (12)	na	na	na	na		na		na	na	13.9				na
	N57	na	na	na	na		па		na	na	па				na
N99425HY	N57 (2)	na	na	na	na		na		na	na	na				na
	NIST16434/10	12.76	5.602	14.48	50.65		0.647		I.853	2.05	па				11.29
M99520HE	NIST1643d/10 (11)	12.4	5.4	16.6	20		0.61		1.88	2.10	na				11.4
	T135	10.5	0I	13.1	8.79		50.5		79	62	па				63
M99520HE	T135 (12)	11.8	10.2	10.9	99		50.5		80	62	na				63
	T145	9.29	9.88	45.6	37.1		9.33		15.3	II	па				9.23
M99520HE	T145 (12)	63	8.6	45	37		9.3		14.5	10.6	na				8.5
	T147	14	2.39	20	73		15.9		12.8	11.4	па				II.8
M99520HE	T147 (12)	12.9	2.42	20	74		15.5		12.2	11.1	na				12.5
	7149	35.5	0.98	128	42.5		2.18		48.8	S	па				1.25
M99520HE	T149 (22)	36	0.60	128	43		2.20		49	7.2	na				1.03

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A1. Quality control data for the April 1999 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, na, not applicable]

Analysis Run	Standard ¹	NH_4	NH ₄ NO ₃ +NO ₂	Na	ïZ	PO_4	Pb	Sb	Se	Sr	П	U	>	Zn
		mg N/L	mg N/L mg N/L	mg/L	µg/L	mg P/L	µg/L	hg/L	µg/L	hg/L	µg/L	µg/L	hg/L	µg/L
		na	na	na		na	na		na			na	na	na
H99519SA	Hg7/100(6)	na	na	na		na	na	na	na	na	na	na	na	na
	Hg12/100	па	na	na			na		na			na	na	na
H99519SA	Hg12/100 (12)	na	na	na			na		na			na	na	na
	N57	0.21	0.22	na			na		na			па	na	na
N99425HY	N57 (2)	0.00	0.22	na			na		na			na	na	na
	NIST1643d/10	па	na	2.207			1.815		1.143			па	3.51	7.248
M99520HE	NIST1643d/10 (11)	na	na	2.31	5.9		1.90		1.00			na	3.56	7.1
	T135	па	na	30.8		na	103		0I			па	52.8	48.2
M99520HE	T135 (12)	na	na	31.7			103		10.0			na	55	48
	7145	па	na	41.2			12.7		I0.I			I.I	11.7	10
M99520HE	T145 (12)	na	na	41		na	13.0		10.0			1.16	11.3	9.4
	T147	па	na	52.6			13.8		I0.I			3.21	15.2	14
M99520HE	T147 (12)	na	na	52			14.0		10.4			3.22	15.3	13.4
	T149	па	na	42.8			8.84		2.1			2.71	31	5.8
M99520HE	T149 (22)	na	na	43			0.6		1.85			2.63	30.9	4.8

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis	Standard ¹	Al	As	В	Ba	Be	Ca	Cd	Ce	Cl	Co	Cr	Cu	Dy	Er	En	Fe	рŊ	Hg
Run		mg/L	$\mu g/L$	$\mu g/L$	$\mu g/L$	µg/L	mg/L	hg/L	hg/L	mg/L	hg/L	hg/L	µg/L	hg/L	hg/L	µg/L	µg/L	µg/L	ng/L
	$H_{ m g} 7/100$	na	ua	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.2
H99910hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.4
H99913hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.8
H99916hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.7
H99917hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.5
	Hg12/100	na	na	па	na	na	na	na	na	па	па	па	na	na	па	na	па	na	14.4
H99910hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.2
H99913hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	17.6
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.7
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.5
	Hg14/100	па	na	па	na	na	na	na	na	na	na	na	na	na	na	na	na	na	7.0
H99910hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	9.9
H99913hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	7.3
H99916hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	6.9
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	8.9
	Hg15/100	na	na	па	na	na	na	na	na	па	па	па	na	na	па	na	na	na	4.1
H99910hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.9
H99913hy	Hg15/100 (5)	na	na	na	na	na	na	na		na	4.2								
H99916hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.3
H99917hy	Hg15/100(5)	na	na	na	na	na	na	na		na	4.2								
	M98	na	na	па	na	na	na	na		32.5	па	na	na	na	па	na	па	па	na
I99630HY	M98 (3)	na	na	na	na	na	na	na	na	34.8	na								
I99701HY	M98(3)	na	na	na	na	na	na	na		37.7	na								
XH90Z661	M98 (3)	na	na	na	na	na	na	na		37.5	na								
	MII0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99630HY	M110(3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99701HY	M110(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
XH90Z661	M110(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N53/10	na	ua	па	na	na	na	na	na	na	na	па	na	na	па	na	na	na	па
XH907661	N53/10 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N60	na	ua	па	na	na	na	na	na	па	па	na	na	na	па	na	na	na	па
N99701H1		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H1		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H2	N61 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Standard ¹	Al	As	В	Ba	Be	Ca	рЭ	Ce	CI	Co	Cr	Cu	Dy	Er	Eu	Fe	рŊ	Hg
Run	ng/L	ng/L	ng/L	ng/L	µg/L	mg/L	ng/L	ng/L	mg/L	µg/L	ng/L	ng/L	ng/L	ng/L	ng/L	µg/L	ug/L	ng/L
N62	na	па	na	na	na	na	na	na	na	na	na				na		na	na
	na	na	na	na	na	na	na	na	na	na	na						na	na
N99701H2 N62 (15)	na	na	na	na	na	na	na	na	na	na	na						na	na
	na	na	па	па	na	na	na	na	na	na	na						na	na
	na	na	na	na	na	na	na	na	na	na	na						na	na
N99630H2 N62/10 (13)	na	na	na	na	na	na	na	na	na	na	na						na	na
NIST1643d/10	12.76	5.602	14.48	50.65	1.253	na	0.647	na	na	2.5	1.853						na	na
M99902HY NIST1643d/10 (10)	11.9	5.4	15.7	51	1.22	na	0.65	na	na	2.51	3.5						na	na
M99907HY NIST1643d/10 (6)	12.4	5.4	15.8	51	1.27	na	0.65	na	na	2.48	4.1						na	na
M99908HY NIST1643d/10 (6)	12.4	5.4	16.6	49	1.26	na	0.68	na	na	2.55	4.9						na	na
M99909HY NIST1643d/10 (8)	12.1	5.4	16.7	51	1.22	na	0.68	na	na	2.49	5.2						na	na
PPREE/100	na	na	na	na	na	na	na	1.63	na	na	na						0.24	na
M99902HY PPREE/100 (6)	na	na	na	na	na	na	na	1.62	na	na	na						0.24	na
M99907HY PPREE/100 (5)	na	na	na	na	na	na	na	1.63	na	na	na						0.24	na
M99908HY PPREE/100 (5)	na	na	na	na	na	na	na	1.66	na	na	na						0.24	na
M99909HY PPREE/100 (4)	na	na	na	na	na	na	na	1.63	na	na	na						0.24	na
SCREE/100	na	na	па	na	na	na	na	0.246	na	na	na						0.083	na
	na	na	na	na	na	na	na	0.24	na	na	na						0.085	na
	na	na	na	na	na	na	na	0.26	na	na	na						0.086	na
	na	na	na	na	na	na	na	0.26	na	na	na						0.088	na
M99909HY SCREE/100 (4)	na	na	na	na	na	na	na	0.25	na	na	na						0.086	na
	na	na	na	па	na	73	na	na	na	na	na						na	na
	na	na	na	na	na	75	na	na	na	na	na						na	na
	na	na	na	na	na	73	na	na	na	na	na	na	na	na		20	na	na
A00229HY T105 (7)	na	na	na	na	na	74	na	na	na	na	na						na	na
TI3I	na	na	na	па	na	30.6	na	na	па	na	na						na	na
	na	na	na	na	na	29	na	na	na	na	na						na	na
	na	na	na	na	na	30	na	na	na	na	na						na	na
A00229HY T131 (6)	na	na	na	na	na	30	na	na	na	na	na						na	na
T135	10.5	0I	13.1	8.79	59	10.4	50.5	na	na	40	26						na	na
	7.9	10.1	10.5	63	99	na	51	na	na	39	9/						na	na
M99907HY T135 (6)	8.3	10.2	11.3	65	28	na	51	na	na	40	78						na	na
	8.4	10.1	11.8	65	59	na	51	na	na	40	79						na	na
	8.5	10.1	11.2	99	09	na	20	na	na	39	79						na	na
T135	na	na	na	na	na	6.6	na	na	na	na	na	na	na				na	na
A00225HY T135 (7)	na	na	na	na	na	10.4	na	na	na	na	na	na	na				na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Standard ¹	Al	As	В	Ba	Be	Ca	Cd	Ce	Cl	Co	Cr	Cu	Dy	Er	Eu	Fe	рŊ	Hg
Run	$\mu g/L$	µg/L	ug/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	ug/L	ug/L	µg/L	µg/L	µg/L	ug/L	µg/L	ng/L
A00229HY T135 (7)	na	na	na	na	na	10.4	na	227	na	na								
TI39	na	na	na	na	па	50.3	na	7.5	na	па								
	na	na	na	na	na	49	na	8.1	na	na								
	na	na	na	na	na	51	na	8.0	na	na								
A00229HY T139 (16)	na	na	na	na	na	51	na	8.0	na	na								
T145	9.79	9.88	45.6	37.1	9.04	30.7	9.33	na	na	I0	15.3	II	na	na	na	IOI	na	па
M99902HY T145 (10)	09	8.6	46	37	8.9	na	9.2	na	na	10.0	13.8	11.0	na	na	na	na	na	na
M99907HY T145 (6)	65	8.6	47	37	9.1	na	9.4	na	na	10.0	14.1	10.5	na	na	na	na	na	na
M99908HY T145 (6)	65	6.6	48	37	9.2	na	9.3	na	na	10.0	14.3	10.5	na	na	na	na	na	na
M99909HY T145 (8)	63	6.6	48	38	9.1	na	9.3	na	na	10.0	14.4	10.8	na	na	na	na	na	na
A00217HY T145 (6)	na	na	na	na	na	30	na	107	na	na								
A00225HY T145 (6)	na	na	na	na	na	30	na	102	na	na								
A00229HY T145 (6)	na	na	na	na	na	31	na	103	na	na								
TI47	14	2.39	20	73	91	na	15.9	na	na	na	12.8	11.4	na	па	па	na	na	па
	12.4	2.46	52	73	15.8	na	15.7	na	na	na	12.0	11.7	na	na	na	na	na	na
M99907HY T147 (6)	12.9	2.45	52	71	16.2	na	15.7	na	na	na	12.2	10.8	na	na	na	na	na	na
M99908HY T147 (6)	13.8	2.46	54	73	16.0	na	15.9	na	na	na	12.4	11.4	na	na	na	na	na	na
M99909HY T147 (7)	13.1	2.42	51	74	16.1	na	15.9	na	na	na	12.4	11.6	na	na	na	na	na	na
TI49	35.5	0.98	128	42.5	na	42.3	2.18	na	na	na	48.8	5	na	na	na	20	na	na
M99902HY T149 (14)	35	0.88	127	42	na	na	2.2	na	na	na	48	7.6	na	na	na	na	na	na
M99907HY T149 (10)	35	0.91	128	42	na	na	2.2	na	na	na	49	7.0	na	na	na	na	na	na
M99908HY T149 (10)	35	0.91	129	42	na	na	2.2	na	na	na	49	7.2	na	na	na	na	na	na
	35	0.82	127	43	na	na	2.2	na	na	na	49	7.5	na	na	na	na	na	na
	na	na	na	na	na	42	na	75	na	na								
A00225HY T149 (7)	na	na	na	na	na	42	na	73	na	na								
A00229HY T149 (7)	na	na	na	na	na	42	na	73	na	na								
	па	na	na	na	па	42	na	na	na	na	па	na	na	па	па	88	na	па
	na	na	na	na	na	43	na	96	na	na								
T155	na	na	na	na	na	42	na	92	na	na								
A00229HY T155 (7)	na	na	na	na	na	41	na	91	na	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis	Standard ¹	Ho	K	La	Li	Lu	Mg	Mn	Mo	NH ⁴ N	NO ₂ +NO,	Na	PΝ	ž	PO_{4}	Pb	Pr	SO_4
Run		ng/L	mg/L	µg/L	ng/L	µg/L	mg/L	ug/L	ng/L n	mg N/L		mg/L	ng/L	µg/L	mg P/L	µg/L	ng/L	mg/L
	Hg7/100	na	na	na	na	na		na	na	na	na							
H99910hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
H99913hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na							
H99916hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
H99917hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
	Hg12/100	na	na	па	na	па	па	na	па	na	na	na	na	na	na	na	na	na
H99910hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na							
H99913hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na							
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na							
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na							
	Hg14/100	na	na	па	na	na	па	na	na	na	na	na	na	na	na	na	na	na
H99910hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na							
H99913hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na							
H99916hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na							
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na							
34	Hg15/100	na	na	па	na	na	па	na	na	na	na	na	na	na	na	na	na	na
H99910hy	Hg15/100(5)	na	na	na	na	na	na	na	na	na	na							
H99913hy	Hg15/100(5)	na	na	na	na	na	na	na	na	na	na							
H99916hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na							
H99917hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na							
	<i>M</i> 98	na	na	па	na	па	па	па	па	na	na	na	na	na	na	na	na	41.5
I99630HY	M98 (3)	na	na	na	na	na	na	na	na	na	37.2							
I99701HY	M98 (3)	na	na	na	na	na	na	na	na	na	39.3							
XH90Z661	M98 (3)	na	na	na	na	na	na	na	na	na	38.7							
	MI10	na	na	па	na	na	па	na	na	na	na	na	na	na	na	na	na	64
I99630HY	M110(3)	na	na	na	na	na	na	na	na	na	62.8							
I99701HY	M110(4)	na	na	na	na	na	na	na	na	na	63.0							
XH90Z66I	M110(4)	na	na	na	na	na	na	na	na	na	63.6							
	N53/10	na	na	па	na	па	па	na	па	na	2.57	na	na	na	na	na	na	na
XH90Z66I	N53/10 (3)	na	na	2.62	na	na	na	na	na	na	na							
	N60	na	na	па	na	па	па	па	па	0.58	0.91	na	na	na	na	na	na	na
N99701H1		na	0.50	0.97	na	na	na	na	na	na	na							
N99701H2		na	0.56	0.98	na	na	na	na	na	na	na							
	N6I	na	na	па	na	na	па	na	na	0.040	na	na	na	na	0.038	na	na	na
N99630H1		na	na (0.019	na	na	na	na	0.050	na	na	na						
N99630H2	N61 (13)	na	na (0.030	na	na	na	na	0.025	na	na	na						

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Standard ¹	Но	X	La	Ľ	Lu	Mg	Mn	Mo	NH4 1	NO ₃ +NO ₂	Na	pN	ΪŻ	PO_4	Pb	Pr	SO_4
Run	ng/L	mg/L	ng/L	ng/L	µg/L	mg/L	ng/L	ng/L m	. 1	mg N/L	mg/L	µg/L	hg/L	mg P/L	ng/L	µg/L	mg/L
N62	na	na	na	na	na		na		na	0.92		na	na	na	ua	na	na
	na	na	na	na	na	na	na	na	na	0.99		na	na	na	na	na	na
N99701H2 N62 (15)	na	na	na	na	na		na		na	1.05		na	na	na	na	na	na
	na	na	па	na	na		па	_	101.0	na		na	na	0.08	na	na	na
	na	na	na	na	na		na	_	0.071	na		na	na	0.084	na	na	na
N99630H2 N62/10 (13)	na	na	na	na	na		na	_	780.0	na		na	na	0.059	na	na	na
NIST1643d/10	na	0.236	na		na		3.766		na	na		na	5.81	na	1.815	na	na
M99902HY NIST1643d/10 (10)	na	0.25	na		na		3.77		na	na		na	5.8	na	1.87	na	na
M99907HY NIST1643d/10 (6)	na	0.25	na		na		3.94		na	na		na	5.9	na	1.95	na	na
M99908HY NIST1643d/10 (6)	na	0.23	na		na		3.94		na	na		na	6.1	na	1.89	na	na
M99909HY NIST1643d/10 (8)	na	0.27	na		na		3.94		na	na		na	5.9	na	1.87	na	na
PPREE/100	0.044	na	0.804	na	0.011		na		na	na		0.934	na	na	na	0.212	na
M99902HY PPREE/100 (6)	0.044	na	0.80	na	0.0111		na		na	na		0.93	na	na	na	0.21	na
M99907HY PPREE/100 (5)	0.044	na	0.77	na	0.01111		na		na	na		0.93	na	na	na	0.21	na
M99908HY PPREE/100 (5)	0.044	na	0.76	na	0.0110		na		na	na		0.93	na	na	na	0.21	na
я М99909HY PPREE/100 (4)	0.044	na	0.78	na	0.0111		na		na	na		0.93	na	na	na	0.21	na
SCREE/100	0.016	na	0.099	na (0.0045		па		na	na		0.222	na	na	na	0.043	na
M99902HY SCREE/100 (5)	0.017	na	0.099	na	0.0049		na		na	na		0.22	na	na	na	0.042	na
M99907HY SCREE/100 (5)	0.018	na	0.101	na	0.0047		na		na	na		0.24	na	na	na	0.045	na
	0.016	na	0.096	na	0.0044		na		na	na		0.23	na	na	na	0.044	na
M99909HY SCREE/100 (4)	0.016	na	0.101	na	0.0045		na		na	na		0.23	na	na	na	0.044	na
T105	na	na	па	na	na		na		na	na		na	na	na	na	na	na
	na	na	na	na	na		na		na	na		na	na	na	na	na	na
T105	na	na	na	na	na		na		na	na		na	na	na	na	na	na
A00229HY T105 (7)	na	na	na	na	na		na		na	na		na	na	na	na	na	na
	na	na	па	na	na		na		na	na		na	na	na	na	na	na
	na	na	na	na	na		na		na	na	na	na	na	na	na	na	na
	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na	na
A00229HY T131 (6)	na	na	na	na	na		na		na	na	na	na	na	na	na	na	na
7135	na	96.0	па	73.7	na		423		na	na	30.8	na	65.6	na	103	na	na
	na	0.96	na	73	na		388		na	na	31	na	63	na	86	na	na
M99907HY T135 (6)	na	0.94	na	75	na		393	63	na	na	31	na	65	na	103	na	na
M99908HY T135 (6)	na	0.92	na	74	na		398	63	na	na	31	na	99	na	103	na	na
T135	na	0.94	na	74	na		406	63	na	na	31	na	64	na	101	na	na
T135	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na	na
A00225HY T135 (7)	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Standard ¹	Но	К	La	Li	Lu	Mg	Mn	Mo	NH ₄	NO ₃ +NO ₂	Na	pΝ	ïZ	PO_4	Pb	Pr	SO_4
	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L r	mg N/L	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	µg/L	mg/L
A00229HY T135 (7)	na	na	na	na	na	2.0	na	na	na	na	na	na	na	na	na	na	na
TI39	na	na	na	na	na	01	na	na	na	na	na	na	na	na	na	na	na
A00217HY T139 (16)	na	na	na	na	na	9.3	na	na	na	na	na	na	na	na	na	na	na
A00225HY T139 (16)	na	na	na	na	na	10.4	na	na	na	na	na	na	na	na	na	na	na
A00229HY T139 (16)	na	na	na	na	na	10.2	na	na	na	na	na	na	na	na	na	na	na
TI45	na	2.13	na	27.3	na	8.68	20.9	9.23	па	na	41.2	na	II	na	12.7	na	na
M99902HY T145 (10)	na	2.21	na	27	na	na	20.5	8.8	na	na	41	na	10.8	na	12.5	na	na
M99907HY T145 (6)	na	2.13	na	28	na	na	21.0	8.7	na	na	42	na	11.0	na	13.1	na	na
M99908HY T145 (6)	na	2.10	na	27	na	na	20.9	8.6	na	na	42	na	11.6	na	13.1	na	na
M99909HY T145 (8)	na	2.16	na	28	na	na	21.5	8.7	na	na	42	na	11.6	na	12.4	na	na
A00217HY T145 (6)	na	na	na	na	na	8.1	na	na	na	na	na	na	na	na	na	na	na
A00225HY T145 (6)	na	na	na	na	na	8.8	na	na	na	na	na	na	na	na	na	na	na
A00229HY T145 (6)	na	na	na	na	na	8.6	na	na	na	na	na	na	na	na	na	na	na
TI47	na	3.52	na	I8	na	na	17.2	II.8	na	na	52.6	na	13.6	na	13.8	na	na
	na	3.7	na	18.1	na	na	17.3	12.2	na	na	54	na	13.6	na	13.7	na	na
	na	3.6	na	18.2	na	na	17.5	12.1	na	na	53	na	13.6	na	13.9	na	na
M99908HY T147 (6)	na	3.6	na	18.4	na	na	17.6	12.2	na	na	53	na	13.8	na	14.4	na	na
M99909HY T147 (7)	na	3.5	na	18.2	na	na	17.9	12.0	na	na	53	na	13.5	na	13.7	na	na
TI49	na	7	na	44.2	na	13.1	II.8	1.25	па	na	42.8	na	31.2	na	8.84	na	na
M99902HY T149 (14)	na	2.0	na	4	na	na	11.6	1.10	na	na	43	na	31	na	8.9	na	na
M99907HY T149 (10)	na	1.9	na	4	na	na	11.7	1.08	na	na	42	na	31	na	9.1	na	na
M99908HY T149 (10)	na	1.9	na	43	na	na	11.8	1.06	na	na	43	na	32	na	9.2	na	na
M99909HY T149 (13)	na	2.0	na	4	na	na	11.9	1.07	na	na	43	na	31	na	8.8	na	na
A00217HY T149 (7)	na	na	na	na	na	12.3	na	na	na	na	na	na	na	na	na	na	na
A00225HY T149 (7)	na	na	na	na	na	13.3	na	na	na	na	na	na	na	na	na	na	na
A00229HY T149 (7)	na	na	na	na	na	13.1	na	na	na	na	na	na	na	na	na	na	na
	na	na	na	na	na	II.I	na	na	па	na	na	na	na	na	na	na	na
	na	na	na	na	na	10.8	na	na	na	na	na	na	na	na	na	na	na
A00225HY T155 (7)	na	na	na	na	na	11.4	na	na	na	na	na	na	na	na	na	na	na
A00229HY T155 (7)	na	na	na	na	na	10.9	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis	Standard	Sp	Se	$S1O_2$	SIII	SI	q.I	II.	Im	\supset	>	X	χρ	Zn
Run		ng/L	ng/L	mg/L	ng/L	ng/L	ng/L	ng/L	$^{-1}$	ng/L	ng/L	hg/L	hg/L	µg/L
	Hg7/100	na	па	na	na	na	na	na	na	na	па	па	па	na
	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg12/100	na	па	na	na	na	na	па	па	na	na	na	na	na
	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg14/100	na	па	na	na	na	na	па	па	na	na	па	па	na
	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg15/100	na	па	na	na	na	па	па	na	na	na	na	na	na
	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	M98	na	па	na	па	na	па	па	na	na	na	na	na	na
	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
XH90Z661	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	M110	na	па	na	na	na	na	па	na	na	ua	na	na	na
	M110(3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na
XH90Z66I	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na
	N53/10	na	па	na	па	na	па	па	па	na	na	па	па	па
XH90Z661	N53/10 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	N60	na	па	na	па	na	па	па	па	na	па	па	па	па
	N60 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2	N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	N6I	na	na	na	na	na	na	na	na	na	na	na	na	na
	N61 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na
CH05966N	N61 (13)	2	123	2	,	,	,	,	,	,				

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Run M62 na na N99701H1 N62 (6) na na N99701H2 N62 (15) na na N99701H2 N62 (15) na na N99630H2 N62/10 na na N99630H2 N62/10 (13) na na N99630H2 N62/10 (13) na na M99902HY NIST1643d/10 (5) 5.6 1.07 na M99903HY NIST1643d/10 (6) 5.6 1.07 na M99903HY NIST1643d/10 (6) 5.6 1.04 na M99903HY NIST1643d/10 (6) 5.6 1.04 na M99903HY NIST1643d/10 (6) 5.6 1.04 na M99903HY NIST1643d/10 (5) na na na M99903HY NIST1643d/10 (5) na na na M99903HY PREE/100 (5) na na na M99903HY SCREE/100 (5) na na na	mg/L na na na na	μg/L μ	ug/L µg/L	L µg/L	µg/L	hg/L	ng/L	hg/L	µg/L	П9/Г
na n	na na na na		ı)				l C
na 5.41 1.143 5.6 1.07 5.6 1.09 na n	na na na					na		na	na	na
na na na na na na na na 5.41 1.143 5.6 1.07 5.6 1.09 na na na	na <i>na</i> na					na		na	na	na
na na na na na na 5.41 1.143 5.6 1.07 5.6 1.04 5.6 1.09 na na 76.3 10 77 9.8 78 9.5 78 9.3	<i>na</i> na					na		na	na	na
na na na na 5.41 1.143 5.6 1.07 5.6 1.04 5.6 1.09 na n	na					na		па	па	na
na na 5.41 1.143 5.6 1.07 5.6 1.09 5.6 1.09 ma na						na		na	na	na
5.41 1.143 5.6 1.07 5.6 1.05 5.6 1.09 6.10 6.10 6.10 6.10 6.10 6.10 6.10 6.10	na					na		na	na	na
5.6 1.07 5.6 1.05 5.6 1.05 ma	na	•		_		na		na	па	7.248
5.6 1.05 5.6 1.04 5.6 1.04 ma na	na				_	na		na	na	7.3
5.6 1.04 5.6 1.09 na na na na na na na	na		_		~	na		na	na	7.4
5.6 1.09 na na na	na				~	na		na	na	7.6
na na 76.3 10 77 9.8 77 9.3 78 9.5 78 9.3	na		_		۵)	na		na	na	7.8
PPREE/100 (6) na na PPREE/100 (5) na na PPREE/100 (5) na na PPREE/100 (4) na na PPREE/100 (4) na na SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (4) na na SCREE/100 (4) na	na					na		1.348	0.082	na
PPREE/100 (5) na na PPREE/100 (5) na na PPREE/100 (4) na na PPREE/100 (4) na na SCREE/100 (5) na na na SCREE/100 (5) na na na SCREE/100 (5) na na na SCREE/100 (4) na na na T105 (7) na na na T131 (6) na na T135 (6) 77 9.8 T135 (6) 77 10.0	na	_			_	na		1.35	0.083	na
PPREE/100 (5) na na PPREE/100 (4) na na SCREE/100 na na SCREE/100 (5) na na na SCREE/100 (5) na na na SCREE/100 (5) na na na SCREE/100 (4) na na na T105 (7) na na na T131 (6) na na T135 (6) T135 (7) T135	na	_			_	na		1.33	0.081	na
PPREE/100 (4) na na SCREE/100 na na SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (4) na na na T105 (7) na na na T1131 (6) na na T131 (6) na na T131 (6) na na T131 (6) na na T135 (6) T135 (7) T13	na	_			_	na		1.38	0.082	na
SCREE/100	na	_			_	na		1.36	0.081	na
SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (4) na na T105 T105 T105 (7) na na T131 (6) na na T135 (7) 10.0 T135 (8) 77 9.8 T135 (9) 77 10.0	na					na		0.472	0.034	na
SCREE/100 (5) na na SCREE/100 (5) na na SCREE/100 (4) na na 17105 (7) na na na 17105 (7) na na na 17105 (7) na na na 17131 (6) na na 17135 (6) 77 9.8 17135 (6) 77 10.0	na		_		_	na		0.48	0.034	na
SCREE/100 (5) na na SCREE/100 (4) na na T105 T105 T105 (7) na na na T105 (7) na na na T105 (7) na na na T131 (6) na na T131 (6) na na T131 (6) na na T131 (6) na na T135 (6) T135 (7) T	na	_ 、	_		_	na		0.47	0.036	na
SCREE/100 (4) na na 7105 T105 (7) na na na 7105 (7) na na na 71105 (7) na na na 7131 (6) na na 17131 (6) na na 7131 (6) na na 7135 (1) 77 9.8 T135 (6) 77 10.0 T135 (6) 78 9.5 T135 (6) 77 10.0	na		_		_	na		0.48	0.034	na
7105 (7) na na na 1105 (7) na na na 1105 (7) na na na 1105 (7) na na na 1131 (6) na na 1131 (6) na na 1135 (1) 77 9.8 1135 (6) 77 10.0 1135 (6) 78 9.3	na	_	_		_	na		0.47	0.035	na
T105 (7) na na na T105 (7) na na na T105 (7) na na na T131 (5) na na na T131 (6) na na na T131 (6) na na na T135 (11) 77 9.8 T135 (6) 77 10.0 T135 (6) 78 9.3	25.4					na		па	па	па
T105 (7) na na na T105 (7) na na na T105 (7) na na na T131 (6) na na na T131 (6) na na na T131 (6) na na T135 (11) T7 9.8 T135 (6) T7 10.0 T135 (6) T85 (6) T8	25					na		na	na	na
T105 (7) na na T131 (6) na na T131 (6) na na T131 (6) na na T131 (6) na na T135 (11) T7 9.8 T135 (6) T135 (6) T7 10.0	26					na		na	na	na
T131 na na T131 (6) na na T131 (6) na na T131 (6) na na T135 76.3 10 T135 (11) 77 9.8 T135 (6) 78 9.5 T135 (6) 77 10.0 T135 (6) 78 9.3	25					na		na	na	na
T131 (6) na na T131 (6) na na T131 (6) na na T131 (6) na na T135 (11) T7 9.8 T135 (6) T135 (6) T7 10.0 T135 (6) T35 (6) T8 9.3	5.8					na		na	па	na
T131 (6) na na T131 (6) na na T135 (11) T7 9.8 T135 (6) T7 10.0 T135 (6) T7 10.0 T135 (6) T8 9.3	5.4					na		na	na	na
T131 (6) na na T135 10 T135 (11) 77 9.8 T135 (6) 78 9.5 T135 (6) 77 10.0 T135 (6) 78 9.3	2.8					na		na	na	na
T135 76.3 10 T135 (11) 77 9.8 T135 (6) 78 9.5 T135 (6) 77 10.0	5.7					na		na	na	na
T135 (11) 77 9.8 T135 (6) 78 9.5 T135 (6) 77 10.0 T135 (6) 78 9.3	4.28					na		na	na	48.2
T135 (6) 78 9.5 T135 (6) 77 10.0 T135 (6) 78 9.3	na					na		na	na	48
77 10.0	na					na		na	na	48
78 93	na					na		na	na	48
	na					na		na	na	48
T135 (7) na na	3.8					na	na	na	na	na
na	4.2					na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Standard ¹	Sb	Se	SiO_2	Sm	Sr	Tp	П	Tm	Ω	>	Y	$^{\mathrm{Yb}}$	Zn
Run	µg/L	µg/L	mg/L	µg/L	ug/L								
A00229HY T135 (7)	na	na	4.0	na	na								
TI39	na	na	9.31	na	na								
A00217HY T139 (16)	na	na	8.7	na	na								
A00225HY T139 (16)	na	na	9.4	na	na								
A00229HY T139 (16)	na	na	9.3	na	na								
T145	8.8	10.1	11.3	na	203	na	15.3	na	I.I	II.7	na	na	10
M99902HY T145 (10)	8.8	6.6	na	na	200	na	15.1	na	1.2	10.6	na	na	9.4
M99907HY T145 (6)	9.0	9.4	na	na	201	na	14.9	na	1.2	11.2	na	na	9.4
M99908HY T145 (6)	8.8	6.7	na	na	201	na	14.9	na	1.2	11.3	na	na	9.2
M99909HY T145 (8)	8.8	9.3	na	na	201	na	14.7	na	1.1	11.2	na	na	9.1
A00217HY T145 (6)	na	na	10.5	na	na								
A00225HY T145 (6)	na	na	11.1	na	na								
A00229HY T145 (6)	na	na	11.0	na	na								
T147	10.5	I0.I	na	na	313	na	20	na	3.21	15.2	na	na	14
M99902HY T147 (11)	10.5	10.6	na	na	317	na	19.1	na	3.3	15.0	na	na	13.8
M99907HY T147 (6)	10.5	10.1	na	na	311	na	18.5	na	3.2	15.5	na	na	13.6
M99908HY T147 (6)	10.5	10.6	na	na	319	na	19.1	na	3.3	15.9	na	na	14.0
M99909HY T147 (7)	10.6	10.3	na	na	320	na	19.0	na	3.2	15.6	na	na	14.0
T149	2I.I	2.1	II.8	na	331	na	31.4	na	2.71	3I	na	na	5.8
M99902HY T149 (14)	21	1.7	na	na	330	na	31	na	2.6	31	na	na	4.5
M99907HY T149 (10)	21	1.9	na	na	331	na	31	na	2.6	31	na	na	4.4
M99908HY T149 (10)	21	1.8	na	na	333	na	31	na	2.6	31	na	na	4.4
M99909HY T149 (13)	21	1.4	na	na	331	na	32	na	2.6	31	na	na	4.3
A00217HY T149 (7)	na	na	11.5	na	na								
A00225HY T149 (7)	na	na	11.4	na	na								
A00229HY T149 (7)	na	na	11.5	na	na								
T155	na	na	10.2	na	na	па	na	па	na	na	na	na	na
A00217HY T155 (7)	na	na	6.6	na	na								
A00225HY T155 (7)	na	na	6.6	na	na								
A00229HY T155 (7)	na	na	9.6	na	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Run pgfL	Analysis	Standard ¹	Al	As	В	Ba	Be	Ca	Cd	Ce	C	Co	Cr	Cu	Dy	Er	Eu	Fe	РS
Figure 2 Figure 3 Figure 3	Run		$\mu g/L$	µg/L	µg/L	hg/L	µg/L							1/g ₁	hg/L	µg/L	hg/L	µg/L	hg/L
BOOKSSHIY CAWAL (2) Inc. Inc. </td <td></td> <td>GWM2</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td>		GWM2	na	na	na	na	na						na	na	na	na	na	na	na
BOG331HY CWAV2 (2) nn	B00329HY	GWM2	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
BOOMORITY CWARQ 2) na	B00330HY		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
BOOMOMENT (2) na	B00331HY		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99930Ny H87100 (6) na	B00406HY		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99903NH Hg7/100(6) na na <td></td> <td>Hg7/100</td> <td>na</td> <td>na</td> <td>na</td> <td>па</td> <td>na</td> <td>na</td> <td>na</td> <td>па</td> <td></td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>па</td> <td>na</td> <td>па</td>		Hg7/100	na	na	na	па	na	na	na	па		na	na	na	na	na	па	na	па
H9900IM H87/100 (6) H8 m na	H99930hy	Hg7/100(6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
$\begin{array}{llllllllllllllllllllllllllllllllllll$	H99001hy	Hg7/100(6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99930Hy Hg121006 na	H99005hy	Hg7/100(6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99930hy Hg121100(6) na		Hg12/100	na	na	na	па	na	na	na	па		па	na	na	na	na	па	па	па
H990Chly Hg12/100(6) na	H99930hy	Hg12/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99050Fly Hg12/100(6) na	H99001hy	Hg12/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
Hg14/100 na	H99o05hy	Hg12/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
H99930hy Hg14/100(6) na		Hg14/100	na	na	па	па	па	na	na	na		па	na	na	na	na	па	na	na
Hg14/100(6) na		Hg14/100(6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
Hg14/100 (6) na	H99001hy	Hg14/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
Hg15/100() na	H99o05hy	Hg14/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
Hg15/100 (6) na		Hg15/100	na	na	na	па	na	na	na	па		na	na	na	na	na	па	na	па
Hg15/100 (6) na	H99930hy	Hg15/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
Hg15/100 (6) na	H99001hy	Hg15/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M94 (2) na na <t< td=""><td>H99o05hy</td><td>Hg15/100 (6)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></t<>	H99o05hy	Hg15/100 (6)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M94 (2) na na <t< td=""><td></td><td>M94</td><td>na</td><td>na</td><td>па</td><td>па</td><td>na</td><td>na</td><td>na</td><td>па</td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>па</td><td>па</td><td>na</td><td>na</td></t<>		M94	na	na	па	па	na	na	na	па		na	na	na	na	па	па	na	na
M94 (2) na na <t< td=""><td>B00302HY</td><td>7 M94 (2)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></t<>	B00302HY	7 M94 (2)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M98 (4) na na na na 37 na na <t< td=""><td>B00303HY</td><td>7 M94 (2)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></t<>	B00303HY	7 M94 (2)	na	na	na	na	na	na	na			na	na	na	na	na	na	na	na
M98 (6) na na na a 36.8 na na na na a 36.8 na		86W	na	na	па	па	na	na	па			na	na	na	na	па	па	na	na
M98 (7) na na na na na 37.4 na	XH80N66I		na	na	na	na	na	na	na			na	na	na	na	na	na	na	na
MII0(6) na na <t< td=""><td>XH60N66I</td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td></td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></t<>	XH60N66I		na	na	na	na	na	na	na			na	na	na	na	na	na	na	na
M110 (5) na		MII0	na	na	па	па	па	na	па	na		na	па	na	na	па	па	na	na
M110 (7) na	XH80N66I		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M136 (2) na	YH60N661		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M136 (2) na		M136	na	na	па	па	na	na	na	na		na	na	na	na	па	па	na	na
M136(2) na	B00329HY	7 M136 (2)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
M136(1) na	B00330HY	7 M136 (2)	na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na
	B00331HY		na	na	na	na	na	na	na	na		na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	Al	As	В	Ba	Be	Ca	Cd	Ce	Cl	Co	Cr	Cu	Dy	Er	Eu	Fe	РЭ
Run	µg/L	µg/L	µg/L	μg/L	µg/L	mg/L	µg/L	,	mg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
B00406HY M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140	na	na	na	na	na	na	na	na	na	na	na	па	na	na	па	na	па
B00215HY M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M142	па	na	na	na	na	na	na	na	na	na	na	na	na	na	па	na	па
B00215HY M142 (2)	na	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na
N56	па	na	na	na	na		na	na	па	na	na	na	na	па	па	na	па
N99924HY N56 (5)	na	na	na	na	na		na	na	na	na	na		na	na	na	na	na
N56/10	па	na	na	na	na		na	na	na	па	па		na	па	па	na	па
N99921HY N56/10 (6)	na	na	na	na	na		na	na		na	na		na	na	na	na	na
N57	па	na	na	na	na	na	na	na	na	na	na		na	na	па	na	па
N99921HY N57 (6)	na	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na
N99924HY N57 (5)	na	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na
N58	na	na	na	na	na	na	na	na	na	na	na		na	na	па	na	па
N99924HY N58 (9)	na	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na
0 <i>I</i> /8 <i>S</i> N	na	na	na	na	na		na	na	na	na	na		na	na	па	na	па
N99921HY N58/10 (29)	na	na	na	na	na			na	na	na	na		na	na	na	na	na
N60	na	na	na	na	па			na	na	na	па		na	na	па	na	па
N99924HY N60 (5)	na	na	na	na	na			na	na	na	na		na	na	na	na	na
N60/10	na	na	na	na	na			na	na	na	na		na	na	па	na	па
N99921HY N60/10 (9)	na	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na
N61	na	na	na	na	na			na	na	na	na		na	na	па	na	па
N99921HY N61 (6)	na	na	na	na	na			na	na	na	na		na	na	na	na	na
N99924HY N61 (5)	na	na	na	na	na			na	na	na	na		na	na	na	na	na
N62	na	na	na	na	na	na		na	na	na	na		na	na	па	na	па
N99924HY N62 (9)	na	na	na	na	na	na		na	na	na	na		na	na	na	na	na
N62/10	na	na	na	na	na			na	na	na	na		na	na	па	na	па
N99921HY N62/10 (9)	na	na	na	na	na	na		na	na	na	na		na	na	na	na	na
NIST1643d/10	12.76	5.602	14.48	50.65	1.253			na	na	2.5	1.853		na	na	па	na	па
M00426HY NIST1643d/10 (10)	13.8	5.4	15.3	51	1.20	na		na	na	5.6	1.63		na	na	na	na	na
PPREE/100	па	na	па	na	na			I.63	na	na	na		0.22	0.12	0.00	na	0.24
M00426HY PPREE/100 (6)	na	na	na	na	na	na	na	1.61	na	na	na	na	0.22	0.120	0.061	na	0.24
SCREE/100	na	na	па	na	na			0.246	na	na	па		0.0814	0.0437	0.0148	na	0.0829
M00426HY SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.080	0.043	0.015	na	0.082
											Ì						

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	Al	As	В	Ba	Be	Ca	Cd	Ce	CI	ပ္ပ	Cr	Cu	Dy	Er	Eu	Fe	рŊ
Run	µg/L	hg/L	hg/L	hg/L	µg/L 1		,	_ 1	mg/L μ	1 T/gr	1 T/gr	ng/L	ng/L	µg/L	µg/L	µg/L	hg/L
TI05	na	na	na	na				na	na	na	na	na	na	na	na	24	na
A00309HY T105 (7)	na	na	na	na	na		na	na	na		na	na	na	na	na	19	na
A00315HY T105 (7)	na	na	na	na	na		na	na	na		na	na	na	na	na	19	na
A00404Hy T105 (5)	na	na	na	na	na		na	na	na	na	na	na	na	na	na	22	na
A00421HY T105 (8)	na	na	na	na	na		na	na	na		na	na	na	na	na	20	na
TI3I	na	na	na	па	na		na	па	na		na	na	na	na	na	200.7	па
A00309HY T131 (6)	na	na	na	na	na		na	na	na		na	na	na	na	na	81	na
A00315HY T131 (6)	na	na	na	na	na	31	na	na	na		na	na	na	na	na	83	na
A00404Hy T131 (5)	na	na	na	na	na		na	na	na		na	na	na	na	na	88	na
A00421HY T131 (7)	na	na	na		na		na	na	na		na	na	na	na	na	87	na
TI35	10.5	0I	13.1	8.29	29		50.5	па	na	40	26	62	na	na	na	228	па
M00426HY T135 (11)	10.4	10.2	10.6	29	29		20	na	na		92	63	na	na	na	na	na
A00309HY T135 (7)	na	na	na	na	na	11.0	na	na	na		na	na	na	na	na	225	na
A00315HY T135 (7)	na	na	na	na	na	11.0	na	na	na		na	na	na	na	na	227	na
S A00404Hy T135 (6)	na	na	na	na	na	11.0	na	na	na		na	na	na	na	na	230	na
A00421HY T135 (8)	na	na	na	na	na	10.7	na	na	na		na	na	na	na	na	227	na
	na	na	na	na	na	50.3	na	na	na		па	na	na	na	na	7.5	na
_	na	na	na	na	na	49	na	na	na		na	na	na	na	na	7.5	na
	na	na	na	na	na	52	na	na	na		na	na	na	na	na	7.3	na
	na	na	na	na	na	51	na	na	na		na	na	na	na	na	7.7	na
A00421HY T139 (19)	na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	7.3	na
TI45	па	na	па	na	na	30.7	na	na	na	па	па	na	na	na	na	IOI	па
A00309HY T145 (6)	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	103	na
A00315HY T145 (6)	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	100	na
T147	14	2.39	20	73	91	41.1	15.9	na	па	na	12.8	11.4	па	па	па	8.4	па
M00426HY T147 (11)	13.9	2.4	51	72	16.2	na	15.7	na	na	na	12.0	11.6	na	na	na	na	na
A00404Hy T147 (5)	na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	7.6	na
A00421HY T147 (7)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	6.7	na
T149	35.5	0.98	128	42.5	na	42.3	2.18	па	na	па	48.8	5	na	na	na	20	na
M00426HY T149 (19)	na	0.97	128	45	na	na	2.1	na	na	na	49	7.3	na	na	na	na	na
A00309HY T149 (7)	na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	72	na
A00315HY T149 (7)	na	na	na	na	na	4	na	na	na	na	na	na	na	na	na	72	na
	na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	72	na
A00421HY T149 (8)	na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	73	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	Al	As	Al As Ba	Ba	Be	Ca	Cd	S	\Box	Co	Cr	Cn	Dy	Ē	En	Fe	Сd
Run	µg/L	µg/L	μg/L μg/L μg/L μg/L	µg/L	µg/L	mg/L	μg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	$\mu g/L$	µg/L	µg/L
TI55	па	na	na	na	na	42	na	na	na	na	na	na	na	na	na	88	na
A00309HY T155 (7)	na	na	na	na	na	45	na	na	na	na	na	na	na	na	na	93	na
A00315HY T155 (7)	na	na	na	na	na	4	na	na	na	na	na	na	na	na	na	06	na
A00404Hy T155 (6)	na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	91	na
A00421HY T155 (8)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	87	na
T157	55.5	55.5 25.4	70.4	II8	13	na	5.8	na	na	4.03	31.3	24.8	na	na	na	na	na
M00426HY T157 (10)	58	26	26 71 118	118	12.9	na	5.7	na	na	4	32	25	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Run GWM2 B00329HY GWM2 B00330HY GWM2 B00331HY GWM2						1/						1		ŧ			ŧ	
		ng/L	ng/L	mg/L	ng/L	ng∕L	hg/L	mg/L	µg/L	μg/L 1	mg N/L	mg N/L	mg/L	µg/L	$^{\rm hg/L}$	mg P/L	µg/L	µg/L
	M2	na	na	па	na	na	па	na	na	na								
	GWM2 (2)	na	na	na	na	na	na	na	na	na								
	GWM2 (2)	na	na	na	na	na	na	na	na	na								
	GWM2 (2)	na	na	na	na	na	na	na	na	na								
;	GWM2 (2)	na	na	na	na	na	na	na	na	na								
•	Hg7/100	па	2.2	па	па	na	па	па	na	na	na	na	na	na	na	na	па	па
H99930hy Hg7.	Hg7/100 (6)	na	3.0	na	na	na	na	na	na	na	na	na						
H99001hy Hg7.	Hg7/100 (6)	na	3.3	na	na	na	na	na	na	na	na	na						
H99o05hy Hg7.	Hg7/100 (6)	na	2.7	na	na	na	na	na	na	na	na	na						
	Hg12/100	na	14.4	na	па	na	na	na	na	na	na	na	na	na	na	na	па	na
H99930hy Hg1	Hg12/100 (6)	na	16.8	na	na	na	na	na	na	na	na	na						
H99o01hy Hg1	Hg12/100 (6)	na	17.4	na	na	na	na	na	na	na	na	na						
H99o05hy Hg1	Hg12/100 (6)	na	16.7	na	na	na	na	na	na	na	na	na						
,	$H_{\rm g}14/100$	па	7.0	na	na	na	па	па	na	na	na	na	na	na	па	na	па	na
	Hg14/100 (6)	na	7.4	na	na	na	na	na	na	na	na	na						
	Hg14/100 (6)	na	7.7	na	na	na	na	na	na	na	na	na						
H99005hy Hg1	Hg14/100 (6)	na	7.2	na	na	na	na	na	na	na	na	na						
	Hg15/100	па	4.1	na	па	na	na	па	na	na	na	na	na	na	na	na	па	па
	Hg15/100 (6)	na	3.9	na	na	na	na	na	na	na	na	na						
	Hg15/100 (6)	na	4.5	na	na	na	na	na	na	na	na	na						
H99o05hy Hg1	Hg15/100 (6)	na	4.5	na	na	na	na	na	na	na	na	na						
	#	па	па	na	па	na	па	па	na	na	na	na	na	na	na	na	па	па
B00302HY M94 (2)	4 (2)	na	na	na	na	na	na	na	na	na								
B00303HY M94 (2)	4 (2)	na	na	na	na	na	na	na	na	na								
M98	~	па	па	na	na	na	па	ua	na	na	na	na	na	na	па	na	па	na
(9) 86W AH80N66I	(9) 8	na	na	na	na	na	na	na	na	na								
(L) 86M AH60N66I	8 (7)	na	na	na	na	na	na	na	na	na								
MII0	01	па	па	na	na	na	па	па	na	na	na	na	na	na	па	na	па	na
	M110 (6)	na	na	na	na	na	na	na	na	na								
199N09HY M11	M110 (7)	na	na	na	na	na	na	na	na	na								
M136	98	па	па	na	na	na	na	па	na	ua	na	na	na	na	na	na	па	na
B00329HY M13	M136 (2)	na	na	na	na	na	na	na	na	na								
B00330HY M136 (2)	36 (2)	na	na	na	na	na	na	na	na	na								
B00331HY M13	M136 (1)	na	na	na	na	na	na	na	na	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

ng/L ng/L µg/L µg/L <th< th=""><th>ng/L na na na</th><th>. Ι/σ/Ι</th><th>ng/L</th><th>1/0/1</th><th>I/vu</th><th></th><th>ŧ</th><th></th><th>1</th><th></th><th></th><th></th><th></th><th>1/-</th><th></th></th<>	ng/L na na na	. Ι/σ/Ι	ng/L	1/0/1	I/vu		ŧ		1					1/-	
BOOQQOGHY MI36 (2) na	na na na	20,0		1 7/SH	IIB/L	,	ug/L r	ng N/L	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	ng/L
M140 na n	na na	na	na	na	na		na	na	na	na	na	na	na	na	na
BO0215HY MI40 (1) na	na	na	na	na	па	na	na	па	па	na	па	па	па	na	na
M142 na n	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BO0215HY MI42 (2) na		na	na	na	па	na	na	na	na	na	na	na	па	na	na
N56 na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N9992HY N56 (5) na	na	na	na	na	na	na	na	0.50	0.75	na	па	na	na	na	na
N56/10 na na <th< td=""><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>0.54</td><td>0.74</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></th<>	na	na	na	na	na	na	na	0.54	0.74	na	na	na	na	na	na
N99921HY N56/10 (6) na	na	na	na	na	па	na	na	0.050	па	na	па	па	990.0	na	na
N99921HY N57 (6) na	na	na	na	na	na	na	na	0.079	na	na	na	na	0.070	na	na
N9992HY N57 (5) na	na	na	na	na	па	na	na	0.21	0.22	na	na	na	0.20		na
N99924HY N57 (5) na	na	na	na	na	na	na	na	0.21	na	na	na	na	0.19		na
N99924HY N58 (9) na	na	na	na	na	na	na	na	0.20	0.19	na	na	na	na		na
N99924HY N58 (9) na	na	na	na	na	na	na	na	0.62	I.0I	na	na	па	na		na
N99921HY N58/10 (29) N99921HY N58/10 (29) N99924HY N60 (5) N99924HY N61 (6) N99924HY N62 (9) N99924HY N62 (10 (10 (10 (10 (10 (10 (10 (10 (10 (10	na	na	na	na	na	na	na	0.64	1.02	na	na	na	na		na
na na<	na	na	na	na	na	na	na	0.062	па	na	na	na	0.069		na
na na<	na	na	na	na	na	na	na	0.062	na	na	na	na	0.073	na	na
na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na na	na	na	na	na	na	na	na	0.58	0.91	na	па	па	na		na
na na<	na	na	na	na	na	na	na	09.0	0.90	na	na	na	na		na
na na<	na	na	na	na	na	na	na	0.058	па	na	па	па	0.068		na
na na<	na	na	na	na	na	na	na	0.060	na	na	na	na	0.068		na
na na<	na	na	na	na	na	na	na	0.040	0.036	na	na	na	0.038		na
na na<	na	na	na	na	na	na	na	0.037	na	na	na	na	0.041		na
na na<	na	na	na	na	na	na	na	0.030	0.053	na	na	na	na		na
na na<	na	na	na	na	na	na	na	I.0I	0.92	na	па	na	na		na
na na<	na	na	na	na	na	na	na	0.97	0.93	na	na	na	na		na
na 11.29 na na 0.23 na 1.70 na na 11.5 0.0443 na na 0.804 na 0.0111 na na	na	na	na	na	na	na	na	0.101	па	na	na	na	0.080		na
na na 0.236 na 1.65 na na na 11.29 na na 0.23 na 1.70 na na na 11.5 0.0443 na na 0.804 na 0.0111 na na na	na	na	na	na	na	na	na	0.099	na	na	na	na	0.059		na
0.0443 na na 0.23 na 1.70 na na na 11.5	na 0		1.65	na	na	na	11.29	na	па	na	na	5.81	na	1.815	na
0.0443 na na 0.804 na 0.0111 na na na na na na	na		1.70	na	na	na	11.5	na	na	na	na	5.9	na		na
0.045 20 0.0111 20 20	па	0.804	па	0.0111	na	na	na	па	па	na	0.934	na	na		0.212
0.045 Ha Ha 0.79 Ha 0.0111 Ha Ha Ha	0.045 na na	0.79	na	0.01111	na	na	na	na	na	na	0.92	na	na	na	0.21
0.0162 na na 0.099 na 0.00453 na na na	па	0.099	na	0.00453	na	na	na	па	па	na	0.222	na	na		0.043I
0.0047 na na na	na	0.099	na	0.0047	na	na	na	na	na	na	0.22	na	na		0.042

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Run 7105)						Mg	IVIII	INIO	ħΠ.	NO_3+NO_2	Na		Z	7	0	11
T105	µg/L	ng/L	mg/L	µg/L	hg/L	µg/L	mg/L	µg/L	µg/L	mg N/L	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	µg/L
	na	na	na		na	na	8.99	73	na	na	na	na	па	na	na	na	na
	na	na	na	na	na	na	72	72	na	na	na	na	na	na	na	na	na
A00315HY T105 (7)	na	na	na	na	na	na	29	69	na	na	na	na	na	na	na	na	na
A00404Hy T105(5)	na	na	na	na	na	na	29	74	na	na	na	na	na	na	na	na	na
A00421HY T105 (8)	na	na	na	na	na	na	29	92	na	na	na	na	na	na	na	na	na
TI3I	na	na	na	na	na	na	8	37.8	na	na	na	21.4	na	na	na	na	na
A00309HY T131 (6)	na	na	na	na	na	na	7.5	34	na	na	na	19	na	na	na	na	na
A00315HY T131 (6)	na	na	na	na	na	na	7.8	34	na	na	na	20	na	na	na	na	na
A00404Hy T131 (5)	na	na	na	na	na	na	7.7	37	na	na	na	18	na	na	na	na	na
A00421HY T131 (7)	na	na	na	na	na	na	7.6	37	na	na	na	17	na	na	na	na	na
T135	na	na	96.0	na	73.7	na	2	423	63	na	na	30.8	na	65.6	na	103	na
M00426HY T135 (11)	na	na	0.91	na	72	na	na	na	63	na	na	na	na	65	na	103	na
	na	na	na	na	na	na	2.2	419	na	na	na	31	na	na	na	na	na
A00315HY	na	na	na	na	na	na	2.1	423	na	na	na	31	na	na	na	na	na
\$\text{A00404Hy} \text{T135}(6)	na	na	na	na	na	na	2.1	423	na	na	na	28	na	na	na	na	na
A00421HY T135(8)	na	na	na	na	na	na	2.0	422	na	na	na	26	na	na	na	na	na
	па	na	na	na	na	na	I0	2.4	na	na	na	6.06	na	па	na	па	па
A00309HY T139 (16)	na	na	na	na	na	na	10.3	2.5	na	na	na	95	na	na	na	na	na
	na	na	na	na	na	na	10.2	2.1	na	na	na	93	na	na	na	na	na
A00404Hy T139 (13)	na	na	na	na	na	na	8.6	2.4	na	na	na	83	na	na	na	na	na
A00421HY T139 (19)	na	na	na	na	na	na	6.6	2.5	na	na	na	81	na	na	na	na	na
	na	na	na	na	na	na	8.68	20.9	na	na	na	41.2	па	na	na	na	na
	na	na	na	na	na	na	9.4	21	na	na	na	42	na	na	na	na	na
A00315HY T145 (6)	na	na	na	na	na	na	9.0	20	na	na	na	41	na	na	na	na	na
T147	па	ua	3.52	na	I8	па	8.2	17.2	II.8	na	na	52.6	na	13.6	na	13.8	па
	na	na	3.5	na	17.8	na	na	na	12.2	na	na	na	na	13.8	na	12.3	na
A00404Hy T147(5)	na	na	na	na	na	na	8.2	17.3	na	na	na	48	na	na	na	na	na
A00421HY T147 (7)	na	na	na	na	na	na	7.9	17.0	na	na	na	4	na	na	na	na	na
T149	na	na	7	na	44.2	na	13.1	II.8	1.25	na	па	42.8	na	31.2	na	8.84	na
M00426HY T149 (19)	na	na	2.1	na	4	na	na	na	1.32	na	na	na	na	31	na	8.1	na
A00309HY T149 (7)	na	na	na	na	na	na	13.6	11.1	na	na	na	42	na	na	na	na	na
	na	na	na	na	na	na	13.4	10.9	na	na	na	42	na	na	na	na	na
A00404Hy T149 (5)	na	na	na	na	na	na	12.9	11.8	na	na	na	37	na	na	na	na	na
A00421HY T149 (8)	na	na	na	na	na	na	12.6	11.7	na	na	na	36	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	Ho	Hg	K	La	Ľ.	Lu	Mg	Mn	Мо	NH_4	NO ₃ +NO ₂	Na	PΝ	ïZ	PO_4	Pb	Pr
Run	µg/L	ng/L	μ J/gr mg/L μg/L μ	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg N/L	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	µg/L
TI55	па	na	na	na	na	na	IIII	50.9		na	na	28.4	na	na	na	na	na
A00309HY T155(7)	na	na	na	na	na	na	11.7	50	na	na	na	29	na	na	na	na	na
A00315HY T155(7)	na	na	na	na	na	na	11.6	49	na	na	na	28	na	na	na	na	na
A00404Hy T155(6)	na	na	na	na	na	na	10.9	51	na	na	na	25	na	na	na	na	na
A00421HY T155(8)	na	na	na	na	na	na	10.5	51	na	na	na	23	na	na	na	na	na
TI57	na	na	2.51	na	32.4	na	na	na	13	na	na	na	na	30	па	6.9	na
M00426HY T157 (10)	na	na	2.5	na	33	na	na	na	12.0	na	na	na	na	32	na	5.7	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

L. pg/L. pg/L	Analysis	Standard ¹	SO_4	$^{\mathrm{q}}$	Se	SiO_2	Sm	Sr	Tb	П	Tm	Ω	>	Y	Yb	Zn	Alkalinity
	Run		mg/L		µg/L	mg/L	µg/L	hg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	μg/L	µg/L	meq/L
2) na na<		GWM2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.053
2)	B00329HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.100
2)	B00330HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.102
2) na na<	B00331HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.096
(6)		GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.107
(6)		Hg7/100	па	na	na	na	па	па	na	na	na	na	па	na	па	па	na
(6)		Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
(6)	H99001hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
(6) na	H99o05hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
(6)		Hg12/100	па	na	na	na	na	па	na	na	na	na	па	na	na	na	па
(6) na	H99930hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
) (6)	H99001hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
)	H99005hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1 (6) na		Hg14/100	na	na	па	na	па	па	na	na	na	na	па	na	na	па	na
1 (6) na	H99930hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
) (6) na	H99001hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
(6) na	H99o05hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1 (6) na		Hg15/100	na	na	na	na	na	na	na	na	па	na	па	na	na	па	па
(6) na na <t< td=""><td>H99930hy</td><td>Hg15/100 (6)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td></t<>	H99930hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1 (6) na	H99001hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
na na<		Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
na na<		M94	na	na	na	na	na	па	na	na	na	na	па	na	na	па	4.900
41.5	B00302HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.884
41.5 na <	B00303HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.875
39.4 na <		M98	41.5	па	па	na	na	па	na	na	na	na	na	na	па	па	na
39.4 na		(9) 86W	39.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
64 na		M98 (7)	39.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
64.0 na		M110	64	na	na	na	na	na	na	na	па	na	na	па	па	па	na
63.9 na		M110 (6)	64.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na
na n		M110(7)	63.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na
na n		M136	na	na	na	na	na	na	na	na	na	na	па	na	na	па	3.040
na n	B00329HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.027
i na na na na na na na na na	B00330HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.033
are are are are are are	B00331HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.033

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

				•)		-			·				•
Analysis Standard ¹	SO_4	$^{\mathrm{q}}$	Se	SiO_2	Sm	Sr	$^{\mathrm{Tb}}$	П	Tm	Ω	Λ	Y	Yb	Zu	Alkalinity
Run	mg/L	µg/L	µg/L	mg/L	μg/L	μg/L	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	µg/L	µg/L	meq/L
B00406HY M136 (2)	na	na		na	na	na	na	na	na	na	na	na	na	na	3.036
M140	na	na	na	na	na	na	па	na	па	na	na	na	na	na	1.200
B00215HY M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.076
M142	na	na	na	na	na	na	па	na	па	na	na	na	na	na	3.600
B00215HY M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.523
N56	na	па	na	na	па	na	па	na	па	na	na	па	па	na	па
N99924HY N56 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N56/10	na	na	na	na	na	na	па	na	па	na	na	na	na	na	па
N99921HY N56/10 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N57	na	na	na	na	na	na	па	na	na	na	na	na	па	na	па
N99921HY N57 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY N57 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N58	na	na	na	па	па	na	па	na	па	na	na	па	па	na	па
N99924HY N58 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N58/10	na	na	na	na	na	na	па	na	na	na	na	па	па	na	па
N99921HY N58/10 (29)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N60	na	na	na	па	па	na	па	na	па	na	na	па	па	na	па
N99924HY N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N60/10	na	па	па	na	па	na	па	na	па	na	na	па	па	па	па
N99921HY N60/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N61	na	na	na	na	па	na	па	na	па	na	na	па	па	na	па
N99921HY N61 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY N61 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N62	na	na	па	па	па	na	na	na	па	na	na	па	na	na	па
N99924HY N62 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N62/10	na	na	na	na	na	na	па	na	na	na	na	па	па	na	па
N99921HY N62/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
NIST1643d/10	na	5.41	1.143	na	na	29.48	па	0.728	na	na	3.51	na	па	7.248	па
M00426HY NIST1643d/10 (10)	na	5.5	1.03	na	na	30	na	0.72	na	na	3.4	na	na	6.9	na
PPREE/100	na	na	na	na	0.204	na	0.0367	na	0.0148	na	na	1.348	0.0818	na	na
M00426HY PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.0148	na	na	1.34	0.081	na	na
SCREE/100	na	na	na	na	0.0674	na	0.0134	na	0.00585	na	na	0.472	0.034	na	па
M00426HY SCREE/100 (5)	na	na	na	na	0.069	na	0.013	na	0.0055	na	na	0.48	0.034	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	IL	Tm	n	Λ	Y	Yb	Zn	Alkalinity
Run	mg/L	µg/L	µg/L	mg/L	hg/L	µg/L	med/L								
TIO5	na	na	na	25.4	na										
A00309HY T105 (7)	na	na	na	25	na										
A00315HY T105 (7)	na	na	na	25	na										
A00404Hy T105 (5)	na	na	na	25	na										
A00421HY T105 (8)	na	na	na	26	na										
TI3I	па	na	па	5.8	na	па	na	na	па	па	na	na	na	па	па
A00309HY T131 (6)	na	na	na	5.5	na										
A00315HY T131 (6)	na	na	na	5.7	na										
-	na	na	na	0.9	na										
A00421HY T131 (7)	na	na	na	5.8	na										
TI35	na	76.3	I0	4.28	na	46	na	na	na	na	52.8	na	na	48.2	na
M00426HY T135 (11)	na	77	10.0	na	na	47	na	na	na	na	50	na	na	48	na
A00309HY T135 (7)	na	na	na	4.4	na										
A00315HY T135 (7)	na	na	na	4. 4.	na										
	na	na	na	4.5	na										
A00421HY T135 (8)	na	na	na	4.6	na										
T139	па	па	na	9.31	па	па	па	па	па	na	na	na	па	па	па
A00309HY T139 (16)	na	na	na	9.4	na										
•	na	na	na	9.6	na										
	na	na	na	9.1	na										
A00421HY T139 (19)	na	na	na	9.4	na										
	па	па	па	II.3	па	па	па	na	па	na	na	na	па	па	па
A00309HY T145 (6)	na	na	na	11.6	na										
A00315HY T145 (6)	na	na	na	11.5	na										
T147	па	10.5	10.1	24	na	313	па	20	na	3.21	15.2	na	na	14	па
M00426HY T147 (11)	na	10.3	10.2	na	na	323	na	19.3	na	3.3	14.4	na	na	12.8	na
A00404Hy T147 (5)	na	na	na	25	na										
A00421HY T147 (7)	na	na	na	25	na										
T149	па	2I.I	2.1	II.8	na	33I	na	31.4	na	2.71	31	na	na	5.8	па
M00426HY T149 (19)	na	19.8	1.85	na	na	332	na	32	na	2.7	31	na	na	5.0	na
A00309HY T149 (7)	na	na	na	11.6	na										
A00315HY T149 (7)	na	na	na	12.1	na										
	na	na	na	11.3	na										
A00421HY T149 (8)	na	na	na	11.7	na										

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹	SO_4 Sb Se	Sb	Se	SiO_2	Sm	Sr	$^{\mathrm{Tb}}$	II	Tm	n	>	Y	Yb	Zu	Alkalinity
Run	mg/L	mg/L µg/L µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	μg/L	µg/L	µg/L	μg/L	$\mu g/L$	meq/L
T155	na	na	na	10.2	na	na	na	na	na	na	na	na	na	na	na
A00309HY T155 (7)	na	na	na	10.5	na	na	na	na	na	na	na	na	na	na	na
A00315HY T155 (7)	na	na	na	10.4	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T155 (6)	na	na	na	6.6	na	na	na	na	na	na	na	na	na	na	na
A00421HY T155 (8)	na	na	na	6.6	na	na	na	na	na	na	na	na	na	na	na
T157	na	10.8	4.6	na	na	59.6	па	8.75	na	3.19	15.7	па	na	23.5	па
M00426HY T157 (10)	na	10.6	4.1	na	na	61	na	8.5	na	3.2	16.7	na	na	23	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Al	As	В	Ba	Be	Ca	Сд	Ce	C	Co	Cr	Cu	Dy	Ē	Eu	Fe	РS
Run		ηg/Γ	µg/L	µg/L	µg/L	µg/L	mg/L	μg/L	ug/L 1	ng/L p	ng/L	ug/L	ug/L	μg/L	μg/L	µg/L	µg/L	ug/L
	$H_{\rm g} 7/100$	па	na	па	na	na	na	na	na	na	na	na	na	па	na	na	na	na
H00613hy	Hg7/100(7)	na	na	na	na	na	na	na	na	na	na							
H00623hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
H00n02hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
H00n03hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na							
	Hg12/100	па	na	па	na	na	na	na	па	na	na	na	na	na	na	na	па	па
H00613hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na							
	Hg14/100	па	ua	na	na	na	na	na	na	na	na	na	na	na	па	na	па	na
H00613hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00623hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n02hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n03hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na							
	Hg15/100	па	na	na	na	па	na	na	na	na	na	na	na	na	na	na	па	па
H00613hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na							
S H00623hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n02hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n03hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na							
	Hg22/100	па	na	na	na	па	na	na	na	na	na	na	na	na	па	па	па	па
H00623hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n02hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na							
H00n03hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na							
I00517HY	M106	па	na	na	па	па	na	na	na	13	na	na	na	na	па	па	па	па
I00517HY	M106 (16)	na	13.3	na														
B00620HY	M106(1)	na	na	na	na	na	na	na	na	na	na							
	M130	па	na	na	na	па	na	na	na	na	na	na	na	na	na	na	па	па
B00620HY	M130 (1)	na	na	na	na	na	na	na	na	na	na							
	M134	па	na	na	na	na	na	na	па	na	na	na	na	na	na	па	па	па
B00620HY	M134 (1)	na	na	na	na	na	na	na	na	na	na							
	M136	па	na	na	na	na	na	na	па	na	na	na	na	na	na	па	па	na
B00530HY	M136 (2)	na	na	na	na	na	na	na	na	na	na							
B00601HY	M136 (2)	na	na	na	na	na	na	na	na	na	na							
B00602HY	M136 (2)	na	na	na	na	na	na	na	na	na	na							
B00605HY	M136 (2)	na	na	na	na	na	na	na	na	na	na							

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Al	As	В	Ba	Be		Cd	Ce	C	ပိ	Ç	Cu	Dy	Er	Eu	Fe	Сd
Run		µg/L	$\mu g/L$	$\mu g/L$	ng/L	$\mu g/L$	mg/L	μg/L	µg/L	mg/L	ng/L	µg/L	μg/L	μg/L	µg/L	µg/L	µg/L	ng/L
B00606HY	M136 (2)	na	na	na	na	na		na										
B00608HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	MI40	na	na	na	па	na	na	na	па	na	па	na						
B00601HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00606HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M142	па	na	na	па	na	na	na	na	na	na	na	na	na	па	na	na	na
B00601HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
S B00606HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M144	na	na	na	па	na	na	па	na	77	na	na	na	na	па	па	па	na
I00517HY	M144 (16)	na	na	na	na	na	na	na	na	76.4	na							
B00620HY	M144 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M146	na	na	na	па	na	na	па	na	46.1	na	na	na	na	па	па	па	na
I00517HY	M146 (16)	na	na	na	na	na	na	na	na	48.5	na							
B00620HY	M146(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	MI50	na	na	na	na	na	па	па	na	na	па	na	na	na	na	па	па	na
B00620HY	M150(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N63	na	na	na	па	na	na	па	na	па	па	na						
N00517HY	N63 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N64	na	na	na	па	na	na	па	na	na	па	na	na	na	па	па	па	na
N00517HY	N64 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I00517HY	N64 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N66	na	na	na	па	na	na	na	na	na	na	na	na	na	na	na	па	na
N00517HY	N66 (25)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N00517H0	N66 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

µg/L µg/L <th< th=""><th>Analysis</th><th>Standard¹</th><th>Al</th><th>As</th><th>В</th><th>Ba</th><th>Ca</th><th>Cq</th><th>ce</th><th>C</th><th>Co</th><th>Cr</th><th></th><th>Dy</th><th>Ęŗ</th><th>Eu</th><th>Fe</th><th>РУ</th></th<>	Analysis	Standard ¹	Al	As	В	Ba	Ca	Cq	ce	C	Co	Cr		Dy	Ęŗ	Eu	Fe	РУ
NNST1643J10 12.76 5602 14.48 50.65 1.23 na 0.647 na 2.5 1.83 2.05 na na NIST1643J10(9) 1.2 5.4 1.6 51 1.3 na 0.701 na na 2.5 1.8 2.2 na na NIST1643J10(9) 1.2 5.4 1.6 51 1.3 na 0.66 na na 2.5 1.7 2.2 na na NIST1643J10(0) 1.2 5.4 1.6 51 1.3 na 0.66 na na 2.5 1.7 2.2 na na NIST1643J10(0) na n	Run		µg/L	µg/L	µg/L	µg/L	ng/L	ng/L	μg/L 1	mg/L	ng/L	ug/L		ng/L	hg/L	µg/L	hg/L	µg/L
NISTIGA34/10 (9) 12 5.4 16 51 1.3 na 0.71 na na 2.5 1.8 2.2 na na para NISTIGA34/10 (9) 1.2 5.4 16 51 1.3 na 0.66 na na 2.5 1.8 2.2 na na para NISTIGA34/10 (9) 1.2 5.5 1.6 1.1 3 na 0.66 na na 2.5 1.8 2.2 na na para PPREE/100 (5) na		NIST1643d/10	12.76	5.602	14.48	50.65	na	0.647	na	na	2.5	1.853		na	na	na	na	na
NINTST(6434/10(10) 13 5.4 17 51 1.3 na 0.70 na na 2.5 1.8 2.2 na na na na na na na n	M00706HY	NIST1643d/10 (9)	12	5.4	16	51	na	0.71	na	na	2.5	1.8		na	na	na	na	na
NINTSTIGNATIO(9) 12 5.5 16 51 1.3 na 0.66 na 2.5 1.7 2.2 na na PPREED/00 na	M00712HY		13	5.4	17	51	na	0.70	na	na	2.5	1.8		na	na	na	na	na
PRREFIJOQ na	M00714hy	NIST1643d/10 (9)	12	5.5	16	51	na	99.0	na	na	2.5	1.7		na	na	na	na	na
PPREEFIOO (6) na		<i>PPREE/100</i>	na	па	na	na	na	na	I.63	na	na	na		0.22	0.12	90.0	na	0.24
PPREE/100(6) na	M00706HY		na	na	na	na	na	na	1.6	na	na	na		0.22	0.12	0.060	na	0.24
PRREFINO(5) na	M00712HY	PPREE/100 (6)	na	na	na	na	na	na	1.6	na	na	na		0.22	0.12	0.061	na	0.24
SCREE/100 na	M00714hy	PPREE/100 (5)	na	na	na	na	na	na	1.6	na	na	na		0.22	0.12	0.060	na	0.24
SCREE/100 (5) na		SCREE/100	na	na	na	na	na	na	0.246	na	na	na	_	0.0814	0.0437	0.0148	na	0.0829
SCREE/100 (5) na	M00706HY	SCREE/100 (5)	na	na	na	na	na	na	0.25	na	na	na		0.084	0.046	0.015	na	0.085
SCREE/100 (5) na	M00712HY	SCREE/100 (5)	na	na	na	na	na	na	0.24	na	na	na		0.081	0.044	0.014	na	0.086
1105 (8) na <	M00714hy	SCREE/100 (5)	na	na	na	na	na	na	0.24	na	na	na		0.082	0.043	0.014	na	0.084
T105 (8) na na na 76 na na na na 74 na <		T105	па	na	na	na	73	na	na	na	na	na		па	na	na	24	na
T105 (8) na <	A00630HY	T105 (8)	na	na	na	na	92	na	na	na	na	na		na	na	na	23	na
T105 (7) na <	XHL0000A 3	T105 (8)	na	na	na	na	74	na	na	na	na	na		na	na	na	24	na
T131 na na na 30.6 na na <th< td=""><td>A00714HY</td><td>T105 (7)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>72</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td>na</td><td>na</td><td>na</td><td>20</td><td>na</td></th<>	A00714HY	T105 (7)	na	na	na	na	72	na	na	na	na	na		na	na	na	20	na
T131 (7) na <		TI3I	па	па	na	na	30.6	na	na	na	na	na		па	na	na	20.7	na
T131 (7) na na 30 na <	A00630HY	_	na	na	na	na	32	na	na	na	na	na		na	na	na	84	na
T131 (6) na na 31 na <	A00707HY		na	na	na	na	30	na	na	na	na	na		na	na	na	92	na
T135 (10) 8 10.5 10 13.1 67.8 59 10.4 50.5 na na 40 79 62 na na T135 (10) 8 10 11 65 59 na 50 na na 40 79 62 na na T135 (11) 8 10 11 66 59 na 50 na 40 79 62 na na T135 (3) na 11 66 59 na 50 na na 40 79 62 na na na T135 (8) na	A00714HY	_	na	na	na	na	31	na	na	na	na	na		na	na	na	91	na
T135 (1) 8 10 11 67 59 na 51 na 40 79 62 na na T135 (1) 8 10 11 66 59 na 50 na		T135	10.5	0I	13.1	8.29	10.4	50.5	na	na	40	62		па	na	na	228	na
T135 (8) 8	M00706HY	T135 (10)	∞	10	11	<i>L</i> 9	na	51	na	na	40	79		na	na	na	na	na
T135 (8) 8 10 11 65 59 na 50 na na 40 79 62 na na na na 11 135 (8) na	M00712HY	T135 (11)	∞	10	11	99	na	20	na	na	39	79		na	na	na	na	na
T135 (8) na na na na na na 11 na	M00714hy	T135 (8)	∞	10	11	65	na	20	na	na	40	79		na	na	na	na	na
T135 (8) na na na na na na 10 na	A00630HY	T135 (8)	na	na	na	na	11	na	na	na	na	na		na	na	na	229	na
T135 (7) na na na na na na 10 na	A00707HY	T135 (8)	na	na	na	na	10	na	na	na	na	na		na	na	na	227	na
T139 (19) na na na na na 130 (19) na	A00714HY	T135 (7)	na	na	na	na	10	na	na	na	na	na		na	na	na	228	na
T139 (19) na na na na na 46 na		TI39	па	па	na	na	50.3	па	na	па	na	na		па	na	па	7.5	па
T139 (19) na na na na na 51 na	A00630HY	T139 (19)	na	na	na	na	46	na	na	na	na	na		na	na	na	6.2	na
T139(16) na	A00707HY	T139 (19)	na	na	na	na	51	na	na	na	na	na		na	na	na	7.6	na
mir mir mir mir mir mir och mir mir mir mir (c.) (c.)	A00714HY	T139 (16)	na	na	na	na	50	na	na	na	na	na		na	na	na	6.3	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip - continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Analysis Standard ¹ Al		As	В	Ba	Be	Ca	Cd	Ce	C	Co	Cr	Cu	Dy	Er	Eu	Fe	Сd
Run		μg/L	µg/L	μg/L μg/L μg/L μg/L	µg/L	ug/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	$\mu g/L$	µg/L	µg/L
	T147	14	2.39	20	73		4I.I		na		na		11.4	na	na	na	8.4	na
M00706HY	T147 (10)	12	2.3	50	9/	16	na	16	na	na	na	13	12	na	na	na	na	na
M00712HY	T147 (11)	12	2.2	50	73	16	na	16	na	na	na	12	11	na	na	na	na	na
M00714hy	T147 (9)	12	2.2	51	73	15	na	16	na	na	na	12	10	na	na	na	na	na
A00630HY	T147 (7)	na	na	na	na	na	35	na	5.8	na								
A00707HY	T147 (7)	na	na	na	na	na	40	na	7.8	na								
A00714HY	T147 (6)	na	na	na	na	na	41	na	6.7	na								
	T149	35.5	0.98		42.5	na	42.3	2.18	na	na	na	48.8	5	na	na	na	20	na
M00706HY	T149 (19)	38	0.80	125	43	na	na	2.2	na	na	na	49	7.1	na	na	na	na	na
M00712HY	T149 (19)	36	0.82		42	na	na	2.2	na	na	na	48	7.6	na	na	na	na	na
M00714hy	T149 (16)	36	0.73		42	na	na	2.2	na	na	na	49	4.6	na	na	na	na	na
A00630HY	T149 (8)	na	na	na	na	na	45	na	73	na								
A00707HY	T149 (8)	na	na	na	na	na	42	na	72	na								
A00714HY	T149 (7)	na	na	na	na	na	45	na	71	na								
55	T155	na	па	na	na	na	42	na	88	na								
A00630HY	T155 (8)	na	na	na	na	na	41	na	90	na								
A00707HY	T155 (8)	na	na	na	na	na	41	na	91	na								
A00714HY	T155 (7)	na	na	na	na	na	41	na	8	na								
	T157	55.5	25.4	70.4	II8	13	na	5.8	na		4.03	31.3	24.8	na	na	na	па	na
M00706HY	T157 (9)	53	26		119	13	na	5.9	na	na	4.0	33	25	na	na	na	na	na
M00712HY	T157 (10)	54	25	70	118	13	na	5.7	na	na	4.0	31	25	na	na	na	na	na
M00714hy	T157 (9)	54	25	71	118	13	na	5.9	na	na	4.1	32	26	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	K	La	Ľ	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	PΖ	ï	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	ug/L	µg/L	mg N/L	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	ug/L
	Hg7/100	2.2	na	na		na	na	na	na	na								
H00613hy	Hg7/100(7)	2.5	na	na	na	na	na	na	na	na								
H00623hy	Hg7/100(6)	5.6	na	na	na	na	na	na	na	na								
H00n02hy	Hg7/100(6)	2.2	na	na	na	na	na	na	na	na								
H00n03hy	Hg7/100(6)	2.2	na	na	na	na	na	na	na	na								
	Hg12/100	14.4	na	па	na	na	na	па	na	na	na	па	na	na	na	па	na	па
H00613hy	Hg12/100 (6)	17.7	na	na	na	na	na	na	na	na								
	Hg14/100	7.0	па	па	na	па	na	па	na	na	na	na	na	na	na	па	na	па
H00613hy	Hg14/100 (6)	8.3	na	na	na	na	na	na	na	na								
H00623hy	Hg14/100 (6)	7.7	na	na	na	na	na	na	na	na								
H00n02hy	Hg14/100 (6)	9.9	na	na	na	na	na	na	na	na								
H00n03hy	Hg14/100 (6)	6.9	na	na	na	na	na	na	na	na								
	Hg15/100	4.1	na	па	na	па	na	na	na	na	na	na						
	Hg15/100 (6)	0.9	na	na	na	na	na	na	na	na								
95 H00623hy	Hg15/100 (6)	4.5	na	na	na	na	na	na	na	na								
H00n02hy	Hg15/100 (6)	3.7	na	na	na	na	na	na	na	na								
H00n03hy	Hg15/100 (6)	3.5	na	na	na	na	na	na	na	na								
	$H_{\rm g}22/100$	12.4	па	па	na	па	na	па	na	na	na	na	ua	na	na	na	na	na
H00623hy	Hg22/100 (6)	12.6	na	na	na	na	na	na	na	na								
H00n02hy	Hg22/100 (6)	11.2	na	na	na	na	na	na	na	na								
H00n03hy	Hg22/100 (6)	10.9	na	na	na	na	na	na	na	na								
100517HY	M106	na	па	па	na	па	na	па	na	na	na	na	ua	na	ua	na	na	na
I00517HY	M106 (16)	na	na	na	na	na	na	na	na									
B00620HY	M106(1)	na	na	na	na	na	na	na	na									
	M130	па	па	па	па	па	na	па	na	na	na	na	ua	na	ua	na	na	na
B00620HY	M130(1)	na	na	na	na	na	na	na	na									
	M134	na	па	па	na	па	na	па	па	na	па	na	na	na	na	na	na	na
B00620HY		na	na	na	na	na	na	na	na									
	M136	na	па	па	na	па	na	па	na	na	na	na	ua	na	na	na	na	na
B00530HY	M136 (2)	na	na	na	na	na	na	na	na									
B00601HY		na	na	na	na	na	na	na	na									
B00602HY		na	na	na	na	na	na	na	na									
B00605HY	M136(2)	na	na	na	na	na	na	na	na									

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	×	La	Ľ	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	PΝ	ï	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	μg/L	ug/L	ug/L	mg/L	µg/L	µg/L	mg N/L 1	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	ug/L
B00606HY	M136 (2)	na	na	na	na	na	na	na	na									
B00608HY	M136 (2)	na	na	na	na	na	na	na	na									
B00620HY	M136 (2)	na	na	na	na	na	na	na	na									
	M140	na	па	na	na	na	na	na	na	na	na	па						
B00601HY	M140(2)	na	na	na	na	na	na	na	na									
B00602HY	M140(2)	na	na	na	na	na	na	na	na									
B00605HY	M140(2)	na	na	na	na	na	na	na	na									
B00606HY	M140(2)	na	na	na	na	na	na	na	na									
B00608HY	M140(2)	na	na	na	na	na	na	na	na									
B00620HY	M140(2)	na	na	na	na	na	na	na	na									
	M142	na	na	па	na	na	na	na	па	na	na	na	na	па	na	na	na	па
B00601HY	M142(2)	na	na	na	na	na	na	na	na									
B00602HY	M142(2)	na	na	na	na	na	na	na	na									
B00605HY	M142(2)	na	na	na	na	na	na	na	na									
XH90900B 57	M142(2)	na	na	na	na	na	na	na	na									
B00608HY	M142(2)	na	na	na	na	na	na	na	na									
B00620HY	M142(2)	na	na	na	na	na	na	na	na									
	M144	na	na	na	na	na	па	па	па	na	na	na	na	na	na	na	па	na
I00517HY	M144 (16)	na	na	na	na	na	na	na	na									
B00620HY	M144 (1)	na	na	na	na	na	na	na	na									
	M146	na	na	na	na	na	па	na	па	na	na	na	na	па	na	na	na	na
I00517HY	M146 (16)	na	na	na	na	na	na	na	na									
B00620HY	M146(1)	na	na	na	na	na	na	na	na									
	M150	na	na	na	na	na	па	na	па	na	na	na	na	па	na	na	na	na
B00620HY	M150(1)	na	na	na	na	na	na	na	na									
	N63	na	na	na	na	na	па	na	na	na	0.15	0.084	na	па	na	0.14	na	na
N00517HY	N63 (7)	na	0.00	0.081	na	na	na	0.12	na	na								
	N64	na	na	na	na	na	па	па	па	na	na	1.26	na	па	na	0.86	па	na
N00517HY	N64 (13)	na	1.28	na	na	na	0.88	na	na									
I00517HY	N64 (15)	na	1.26	na	na	na	na	na	na									
	N66	na	na	na	na	na	па	па	па	na	0.77	0.93	na	па	na	0.81	па	na
N00517HY	N66 (25)	na	0.77	0.94	na	na	na	0.81	na	na								
N00517H0	N66 (12)	na	0.81	na	na	na	na	0.73	na	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

	-																	
Analysis	Standard	$_{ m Hg}$	Ho	K	La	Ľ	Γn	Mg	Mn	Mo	NH_4	NO_3	Na	PΝ		PO_4	Pb	Pr
Run		ng/L	ηg/Γ	mg/L	μg/L		$^{ m hg/L}$	mg/L	hg/L	μg/L 1	mg N/L	mg N/L	mg/L	µg∕L ,		mg P/L	µg/L	µg/L
	NIST1643d/10	na	na	na	na		na		na		na		na	na		na	1.815	na
M00706HY	NIST1643d/10 (9)	na	na	na	na	1.74	na	na	na	11	na	na	na	na	0.9	na	1.9	na
M00712HY		na	na	na	na		na		na	12	na		na	na	5.9	na	1.9	na
M00714hy	NIST1643d/10 (9)	na	na	na	na		na		na	10	na		na	na	5.9	na	1.9	na
	PPREE/100	na	0.0443	na	0.804		0.0111		na	na	na		na	0.934	na	na	na	0.212
M00706HY	PPREE/100 (6)	na	0.044	na	0.81	na	0.011		na	na	na	na	na	0.94	na	na	na	0.21
M00712HY	PPREE/100 (6)	na	0.045	na	0.80		0.011		na	na	na	na	na	0.94	na	na	na	0.21
M00714hy	PPREE/100 (5)	na	0.044	na	0.81		0.011		na	na	na	na	na	0.94	na	na	na	0.21
	SCREE/100	na	0.0162	na	0.099	na	0.00453		na	na	na		na	0.222	па	na	na	0.0431
M00706HY		na	0.016	na	0.10		0.0048		na	na	na	na	na	0.23	na	na	na	0.043
M00712HY	SCREE/100 (5)	na	0.016	na	0.10		0.0046		na	na	na	na	na	0.23	na	na	na	0.042
M00714hy	SCREE/100 (5)	na	0.016	na	0.10		0.0045		na	na	na	na	na	0.23	na	na	na	0.043
	7105	na	na	19.5	na		na		73	na	na		na	па	па	na	na	na
A00630HY	T105 (8)	na	na	20	na		na		78	na	na	na	na	na	na	na	na	na
% A00707HY	T105 (8)	na	na	19	na	na	na		79	na	na		na	na	na	na	na	na
A00714HY	T105 (7)	na	na	20	na		na		77	na	na		na	na	na	na	na	na
	TI3I	na	па	2.39	па		na		37.8	na	na	na	21.4	па	па	na	na	па
A00630HY	T131 (7)	na	na	2.1	na	na	na		34	na	na	na	21	na	na	na	na	na
A00707HY	T131 (7)	na	na	2.4	na		na		38	na	na	na	22	na	na	na	na	na
A00714HY	T131 (6)	na	na	2.3	na		na		38	na	na	na	22	na	na	na	na	na
	TI35	na	na	96.0	па		na		423	63	na	na	30.8	na	9.59	na	103	па
M00706HY		na	na	na	na	74	na	na	na	63	na	na	na	na	65	na	102	na
M00712HY	T135 (11)	na	na	na	na	72	na	na	na	63	na	na	na	na	65	na	103	na
M00714hy	T135(8)	na	na	na	na	74	na	na	na	57	na	na	na	na	65	na	103	na
A00630HY	T135 (8)	na	na	0.93	na	na	na	1.9	406	na	na	na	28	na	na	na	na	na
A00707HY	T135 (8)	na	na	0.97	na	na	na	2.1	425	na	na	na	31	na	na	na	na	na
A00714HY	T135 (7)	na	na	0.97	na	na	na	2.0	424	na	na	na	31	na	na	na	na	na
	TI39	na	па	2.73	па	па	na	0I	2.4	na	na	na	na	па	па	na	na	па
A00630HY	T139 (19)	na	na	2.5	na	na	na	8.8	2.2	na	na	na	na	na	na	na	na	na
A00707HY	T139 (19)	na	na	2.7	na	na	na	10	2.3	na	na	na	na	na	na	na	na	na
A00714HY	T139 (16)	na	na	2.7	na	na	na	10	2.5	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	×	La	Ľ	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	ΡN	ï	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	µg/L	µg/L	µg/L	1	µg/L	µg/L 1	mg N/L	mg N/L	mg/L	µg/L	ug/L n	mg P/L	µg/L	µg/L
	T147	иа	na	3.52	na	8I	na		17.2	II.8	na	na	52.6	na	13.6	na	13.8	na
M00706HY	T147 (10)	na	na	na	na	18	na	na	na	12	na	na	na	na	14	na	14	na
M00712HY	T147 (11)	na	na	na	na	17	na	na	na	12	na	na	na	na	13	na	14	na
M00714hy	T147 (9)	na	na	na	na	17	na	na	na	11	na	na	na	na	13	na	14	na
A00630HY	T147 (7)	na	na	3.3	na	na	na	6.5	14	na	na	na	45	na	na	na	na	na
A00707HY	T147 (7)	na	na	3.5	na	na	na	8.2	17	na	na	na	49	na	na	na	na	na
A00714HY	T147 (6)	na	na	3.6	na	na	na	8.1	17	na	na	na	na	na	na	na	na	na
		па	na	7	na	44.2	na	13.1	II.8	1.25	na	na	42.8	na	31.2	na	8.84	na
M00706HY		na	na	na	na	4	na	na	na	1.1	na	na	na	na	32	na	8.8	na
M00712HY	T149 (19)	na	na	na	na	4	na	na	na	1.1	na	na	na	na	31	na	9.1	na
M00714hy	T149 (16)	na	na	na	na	4	na	na	na	1.0	na	na	na	na	31	na	0.6	na
A00630HY	T149 (8)	na	na	2.0	na	na	na	13	11	na	na	na	40	na	na	na	na	na
A00707HY	T149 (8)	na	na	2.0	na	na	na	13	12	na	na	na	42	na	na	na	na	na
A00714HY	T149 (7)	na	na	2.0	na	na	na	13	12	na	na	na	42	na	na	na	na	na
59	T155	па	na	5.64	na	па	na	II.I	50.9	na	na	па	28.4	na	na	na	na	na
A00630HY	T155 (8)	na	na	5.7	na	na	na	11	20	na	na	na	27	na	na	na	na	na
A00707HY	T155 (8)	na	na	5.7	na	na	na	11	53	na	na	na	29	na	na	na	na	na
A00714HY	T155 (7)	na	na	5.6	na	na	na	11	52	na	na	na	28	na	na	na	na	na
	T157	па	па	na	na	32.4	па	па	na	13	na	па	na	па	30	na	6.9	na
M00706HY	T157 (9)	na	na	na	na	33	na	na	na	12	na	na	na	na	31	na	6.5	na
M00712HY	T157 (10)	na	na	na	na	33	na	na	na	12	na	na	na	na	30	na	9.9	na
M00714hy	T157 (9)	na	na	na	na	33	na	na	na	10	na	na	na	na	31	na	6.5	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	Π	Tm	Ω	>	Y	Yb	Zn	Alkalinity
Run		mg/L	µg/L	µg/L	mg/L	ug/L	ug/L	µg/L	µg/L	µg/L	μg/L	μg/L	µg/L	µg/L	µg/L	meq/L
	$H_{\rm g}7/100$	na	na	na	na	na	na	na	na	na	ua	па	na	na	na	na
H00613hy	Hg7/100(7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg7/100(6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg12/100	па	na	na	na	na	na	па	na							
H00613hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg14/100	na	па	na	na	па	na	na	na	па	na	na	na	па	na	na
H00613hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg15/100	па	na	na	na	па	na	па	na	па						
H00613hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg22/100	na	па	na	na	па	na									
H00623hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I00517HY	M106	27.6	па	na	na	па	na	na	na	па	na	na	na	па	na	0.156
I00517HY	M106 (16)	25.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M106(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.157
	M130	na	па	na	na	па	na	na	na	па	na	na	na	па	na	1.200
B00620HY	M130 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.125
	M134	na	па	na	na	па	na	na	na	па	na	na	na	па	na	1.258
B00620HY	M134 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.271
	M136	na	na	na	na	na	na	na	na	na	na	na	na	па	na	3.040
B00530HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.048
B00601HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.068
B00602HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.071
B00605HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.063

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Mi36 (2) na <	Analysis	Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	П	Tm	n	>	Y	Yb	Zn	Alkalinity
M136 (2) na <	Run		mg/L	µg/L	ug/L	mg/L	µg/L	μg/L	µg/L	µg/L	meq/L						
M136 (2) na <	B00606HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.071
M136 (2) na <	B00608HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.095
M140 na n	B00620HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.094
M140 (2) na <		M140	па	na	na	na	na	na	na	na	na	na	na	па	па	па	2.280
M140 (2) na <	B00601HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.279
M140 (2) na <	B00602HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.211
M140 (2) na <	B00605HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.275
M140 (2) na <	B00606HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.281
M140 (2) na <	B00608HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.288
M142 na n	B00620HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.291
M142 (2) na <		M142	na	na	na	na	na	na	na	na	na	na	na	па	па	па	3.600
M142 (2) na <	B00601HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.634
M142 (2) na <	B00602HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.722
M142 (2) na <	B00605HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.631
MI42 (2) na <	B00606HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.623
MI42 (2) na <	B00608HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.638
M144 210 na	B00620HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.644
M144 (16) 231 na		M144	210	па	na	na	na	na	па	na	па	na	na	па	па	па	1.776
M144 (1) na <	I00517HY	M144 (16)	231	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M146 69 na n	B00620HY	M144 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.736
M146 (16) 68.8 na		M146	69	па	na	na	na	na	па	na	па	na	na	па	па	па	1.152
M146 (1) na <	I00517HY	M146 (16)	8.89	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MI50 na n	B00620HY	M146(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.041
M150 (1) na <		M150	па	па	na	na	na	na	па	na	na	na	na	па	na	na	0.528
N63 na N66(12) na <t< td=""><td>B00620HY</td><td>M150(1)</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>na</td><td>0.499</td></t<>	B00620HY	M150(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.499
N63 (7) na		N63	па	па	na	na	na	na	па	na	па	na	na	па	па	па	na
N64 na	N00517HY	N63 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N64 (13) na <		N64	па	па	na	na	na	na	па	na	па	na	па	па	па	па	na
N64 (15) na	N00517HY	N64 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N66 (25) na	I00517HY	N64 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N66 (25) na		99N	па	па	na	na	na	na	па	na	na	na	na	па	па	па	па
N66 (12) na na na na na na na na	N00517HY	N66 (25)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N00517H0	N66 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	SO_4	Sb	Se	SiO ₂		Sr	Tb	П	Tm	n	>	Y	Yb	Zu	Alkalinity
Run		mg/L	µg/L	µg/L	mg/L	,	µg/L	µg/L	µg/L	µg/L	μg/L	μg/L	μg/L	µg/L	µg/L	meq/L
	NIST16434/10	na	5.41	1.143	na		29.48	na	0.728	na	na	3.51	na	na	7.248	na
M00706HY	NIST1643d/10 (9)	na	5.5	1.0	na		30	na	0.73	na	na	3.6	na	na	7.0	na
M00712HY	NIST1643d/10 (10)	na	5.5	1.1	na		30	na	0.72	na	na	3.7	na	na	7.4	na
M00714hy	NIST1643d/10 (9)	na	5.5	1.1	na		29	na	0.71	na	na	3.5	na	na	7.3	na
	<i>PPREE/100</i>	na	па	па	па		na	0.0367	па	0.0148	na	na	1.348	0.0818	па	na
M00706HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.4	0.081	na	na
M00712HY	PPREE/100 (6)	na	na	na	na	0.21	na	0.037	na	0.015	na	na	1.4	0.082	na	na
M00714hy	PPREE/100 (5)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.3	0.082	na	na
	SCREE/100	na	па	na	па	0.0674	na	0.0134	па	0.00585	na	na	0.472	0.034	па	na
M00706HY	SCREE/100 (5)	na	na	na	na	0.070	na	0.014	na	0.0058	na	na	0.48	0.034	na	na
M00712HY	SCREE/100 (5)	na	na	na	na	0.065	na	0.014	na	0.0056	na	na	0.47	0.034	na	na
M00714hy	SCREE/100 (5)	na	na	na	na	0.071	na	0.014	na	0.0060	na	na	0.47	0.033	na	na
	T105	na	na	па	25.4	па	na	па	па	na	na	na	па	па	па	na
A00630HY	T105 (8)	na	na	na	26	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T105 (8)	na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T105 (7)	na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
	T131	na	na	па	5.8	na	na	па	па	na	na	na	па	na	na	па
A00630HY	T131 (7)	na	na	na	4.9	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T131 (7)	na	na	na	6.1	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T131 (6)	na	na	na	0.9	na	na	na	na	na	na	na	na	na	na	na
	T135	na	76.3	0I	4.28	па	46	па	па	na	na	52.8	па	па	48.2	na
M00706HY	T135 (10)	na	92	10	na	na	47	na	na	na	na	53	na	na	48	na
M00712HY	T135 (11)	na	9/	10	na	na	47	na	na	na	na	52	na	na	49	na
M00714hy	T135 (8)	na	77	10	na	na	46	na	na	na	na	52	na	na	48	na
A00630HY	T135 (8)	na	na	na	4.1	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T135 (8)	na	na	na	4.5	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T135 (7)	na	na	na	4.2	na	na	na	na	na	na	na	na	na	na	na
	T139	na	na	па	9.31	na	na	па	па	na	na	na	па	na	па	na
A00630HY	T139 (19)	na	na	na	7.9	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T139 (19)	na	na	na	9.4	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T139 (16)	na	na	na	9.3	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	$\mathbf{Standard}^1$	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	П	Tm	Ω	Λ	Y	Yb	Zu 7	Alkalinity
Run		mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	μg/L	μg/L	μg/L	µg/L	µg/L	meq/L
	T147	ua	10.5	I0.I	24	ua	313	иа	20	ua	3.21	15.2	ua	na	14	na
M00706HY	T147 (10)	na	10	11	na	na	325	na	19	na	3.3	15	na	na	13	na
M00712HY	T147 (11)	na	10	11	na	na	318	na	19	na	3.2	15	na	na	13	na
M00714hy	T147 (9)	na	10	10	na	na	316	na	19	na	3.2	15	na	na	11	na
A00630HY	T147 (7)	na	na	na	21	na										
A00707HY	T147 (7)	na	na	na	24	na										
A00714HY	T147 (6)	na	na	na	25	na										
	T149	па	2I.I	2.1	II.8	na	33I	па	31.4	na	2.71	3I	па	na	5.8	na
M00706HY	T149 (19)	na	20	1.6	na	na	331	na	32	na	2.6	30	na	na	2.9	na
M00712HY	T149 (19)	na	21	1.7	na	na	331	na	31	na	2.6	30	na	na	5.1	na
M00714hy	T149 (16)	na	21	1.8	na	na	331	na	31	na	2.6	30	na	na	na	na
A00630HY	T149 (8)	na	na	na	12	na										
A00707HY	T149 (8)	na	na	na	12	na										
A00714HY	T149 (7)	na	na	na	12	na										
	T155	na	па	na	10.2	na	па	na	na	na	na	па	na	па	na	na
A00630HY	T155 (8)	na	na	na	0.6	na										
A00707HY	T155 (8)	na	na	na	10.0	na										
A00714HY	T155 (7)	na	na	na	8.6	na										
	T157	па	10.8	4.6	na	na	59.6	па	8.75	na	3.19	15.7	па	na	23.5	na
M00706HY	T157 (9)	na	11	4.0	na	na	09	na	9.8	na	3.2	17	na	na	23	na
M00712HY	T157 (10)	na	11	4.1	na	na	59	na	8.5	na	3.3	16	na	na	23	na
M00714hy	T157 (9)	na	11	4.0	na	na	59	na	8.6	na	3.3	16	na	na	23	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

L µg/L µg/L µg/L na na na na na<	Analysis	$\mathbf{Standard}^1$	Al	As	В	Ba	Be	Ca	рЭ	C	Ce	Co	Ċ	Cu	Dy	Er	Eu	Fe	РŊ
Hg2/100 (10) na	Run		µg/L	µg/L	µg/L	µg/L	µg/L		_			1g/L	ng/L	ng/L	µg/L	µg/L	µg/L	$\mu g/L$	µg/L
Hg2/100(10) na na		$H_{\rm g}7/100$	na	na	na	na	na					na	na						
Hg/5/100(10) na na	H02807HY	Hg7/100(9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg55100(10) Hg H	H02808HY	Hg7/100(10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg15/100(10) na na na na na na na n		Hg15/100	na	na	па	na	na	па	na	na	na	na	na	па	na	na	па	па	па
Hg22100(9) na	H02807HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg22100 (9) na	H02808HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
(Hg22/100(0)) na na		$H_822/100$	na	na	па	na	na	па	na		na	na	na	па	na	na	па	па	па
Hg254(100(10)) na na	H02807HY	Hg22/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg25c/1000 na	H02808HY	Hg22/100 (10)	na	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na
Hg26/100 (10) na na		$H_{8}26/100$	na	па	па	na	na	na			na	na	na	па	na	na	na	па	па
Hg26/100 (10) na na	H02807HY	Hg26/100 (10)	na	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na
My88 (3) na <	H02808HY	Hg26/100 (10)	na	na	na	na	na	na		na	na	na	na	na	na	na	na	na	na
M98 (7) na na na 32.4 na na na 32.4 na na		М98	na	па	na	na	na	na			na	na	na	na	na	na	na	па	na
MOSS (4) na <	I01927HY	M98 (7)	na	na	na	na	na	na			na	na	na	na	na	na	na	na	na
MOSR (3) na na na 32.8 na	101928HY	M98 (4)	na	na	na	na	na	na			na	na	na	na	na	na	na	na	na
M106 na na na 13 na na na 13 na n	45 I01002HY	M98 (3)	na	na	na	na	na	na			na	na	na	na	na	na	na	na	na
MIO6 (4) na na na na na 12.2 na		M106	па	па	па	na	na	na			па	na	na	па	na	na	na	па	па
MI106 (3) na	I01928HY	M106(4)	na	na	na	na	na	na			na	na	na	na	na	na	na	na	na
MII0 na n	I01002HY	M106(3)	na	na	na	na	na	na			na	na	na	na	na	na	na	na	na
M110 (7) na <		M110	na	na	na	na	na	na			na	na	na	na	na	na	па	па	па
M136 (2) na <	I01927HY		na	na	na	na	na	na	na		na	na	na	na	na	na	na	na	na
M136 (2) na <		M136	na	na	na	na	na	па	na		na	na	na	na	na	na	па	па	па
M136 (1) na <	B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M136 (2) na <	B01N07HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M136 (4) na	B01N14HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M136 (2) na	B01N19HY	M136(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M136 (2) na	B01N26HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140 na n	B01N28HY		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140 (2) na		M140	na	na	na	na	na	па	na	na	na	na	na	na	na	na	па	па	па
M140 (1) na	B01N05HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140 (2) na	B01N07HY	M140(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140 (4) na	B01N14HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140(2) na	B01N19HY	M140(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M140(2) na	B01N26HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	B01N28HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	ΑI	As	В	Ba	Be	Ca	рЭ	C	Ce	Co	Cr	Cn	Dy	Ę	Eu	Fe	РŊ
Run		µg/L	μg/L	µg/L	µg/L	µg/L	ng/L	ug/L 1	mg/L	1/gr	ug/L	ug/L	ng/L	µg/L	µg/L	µg/L	µg/L	ug/L
	M142	na	na	na	na	na	na		na									
B01N05HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M144	na	na	na	na	na	na	па	77	na	na	na	na	па	па	па	na	па
I01928HY	M144 (4)	na	na	na	na	na	na	na	75	na	na		na	na	na	na	na	na
I01002HY	M144 (4)	na	na	na	na	na	na	na	78	na			na	na	na	na	na	na
	M146	па	na	па	na	na	na	па	46.1	na			na	па	па	па	na	па
I01928HY	M146(7)	na	na	na	na	na		na	48.6	na			na	na	na	na	na	na
I01002HY	M146 (6)	na	na	na	na	na		na	47.5	na			na	na	na	na	na	na
	N62	па	na	na	na	na		па	na	na			na	па	па	па	na	па
S 101927HY	N62 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
I01928HY	N62 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
I01O02HY	N62 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
	N68	na	na	na	na	na		па	na	na			na	na	па	na	па	na
N01003HY	N68 (5)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
I01927HY	N68 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
I01928HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N68 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
	N69	na	na	na	na	na		na	na	na			na	na	na	na	па	na
N01926HY	N69 (11)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
N01003HY	N69 (10)	na	na	na	na	na	na	na	na	na			na	na	na	na	na	na
	N70	na	na	na	na	na		па	na	na			na	na	па	na	па	na
N01926HY	N70 (12)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
N01003HY	N70 (11)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
I01O02HY	N70 (1)	na	na	na	na	na		na	na	na			na	na	na	na	na	na
	NIST1643d/10	12.76	5.602	14.48	50.65	1.253		0.647	na	na			2.05	па	па	па	na	па
M01N16HY	NIST1643d/10 (10)	13.3	5.4	17.1	51	1.22		0.64	na	na			2.2	na	na	na	na	na
M01N09HY	NIST1643d/10 (9)	12.9	5.3	16.0	50	1.21	na	0.61	na	na			2.0	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

PPRA PPRA PPRA PPRA PPRA PPRA PPRA PPRA	Analysis	Standard ¹	ΑI	As	В	Ba		Ca	Сd	C	Ce	Co	Ç	Cn	Dy	Ę	En	Fe	РŊ
PPREE/100 na	Run		ng/L			ng/L		ng/L	,	mg/L	ng/L	ng/L	ng/L	ng/L	ug/L	ng/L	ng/L	ng/L	ng/L
PPREE/100 (6) na na na na na PPREE/100 (6) na na na na PPREE/100 (6) na na na na SCREE/100 na na na na SCREE/100 (5) na na na na T131 na na na na T131 na na na na T135 na na na na		PPREE/100	na	na		na		na		na		na	na	na	0.22	0.12	90.0	na	0.24
PPREE/100 (6) na na na na na PPREE/100 (6) na na na na na SCREE/100 na na na na na SCREE/100 (5) na na na na na SCREE/100 (5) na na na na na na SCREE/100 (5) na na na na na na SCREE/100 (5) na na na na na na T131 na na na na na na T131 na na na na na na T131 na na na na na na T135 na na na na na na T131 na na na na na na T134 na na na na na	M01N09HY	PPREE/100 (6)	na	na	na	na		na	na	na	_ 、	na	na	na	0.22	0.12	0.060	na	0.24
PPREE/100 (6) na na na na na SCREE/100 na na na na na SCREE/100 (5) na na na na na SCREE/100 (5) na na na na na SCREE/100 (5) na na na na na T131 na na na na na T131 (7) na na na na na T131 (8) na na na na na T131 (8) na na na na na T135 (10) 9.4 10.0 11.0 67.8 58 T135 (11) 9.4 10.0 11.0 67.8 58 T135 (11) 9.4 10.0 11.0 67.8 58 T137 (8) na na na na na T143 (8) na na na na	M01N16HY	PPREE/100 (6)	na	na	na	na		na	na	na		na	na	na	0.22	0.12	0.060	na	0.24
SCREE/100 na na na na na SCREE/100 (5) na na na na na SCREE/100 (5) na na na na na SCREE/100 (5) na na na na na T131 na na na na na T131 (8) na na na na na T131 (8) na na na na na T135 (10) 9.4 10.0 11.0 67.8 58 T135 (11) 9.4 10.0 11.0 67.8 58 T135 (11) 9.4 10.0 11.0 66 58 T135 (11) 9.4 10.0 11.0 66 58 T137 (8) na na na na T143 na na na na T143 na na na na T144 <td< td=""><td>M01N20HY</td><td>PPREE/100 (6)</td><td>na</td><td>na</td><td>na</td><td>na</td><td></td><td>na</td><td>na</td><td>na</td><td>_ 、</td><td>na</td><td>na</td><td>na</td><td>0.22</td><td>0.12</td><td>0.060</td><td>na</td><td>0.24</td></td<>	M01N20HY	PPREE/100 (6)	na	na	na	na		na	na	na	_ 、	na	na	na	0.22	0.12	0.060	na	0.24
SCREE/100 (5) na na na na T131 na na na na na T131 (7) na na na na na T131 (8) na na na na na T135 (10) 9.5 10.0 13.1 67.8 59 T135 (11) 9.4 10.0 11.0 67. 57 T135 (11) 9.4 10.0 11.0 67. 58 T137 (8) na na na na T143 (8) na na na na		SCREE/100	па	na	na	na		na	na	na		na	па	na	0.0814	0.0437	0.0148	na	0.0829
SCREE/100 (5) na na na na SCREE/100 (5) na na na na T/31 na na na na T/31 na na na na T/131 (7) na na na na T/131 (8) na na na na T/135 (10) 9.4 10.0 11.0 67 57 T/135 (11) 9.4 10.0 11.0 67 58 T/135 (11) 9.4 10.0 11.0 67 58 T/137 (10) 9.4 10.0 11.0 67 58 T/137 (8) na na na na T/143 (8) na </td <td>M01N09HY</td> <td>SCREE/100 (5)</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td></td> <td>na</td> <td>na</td> <td>na</td> <td></td> <td>na</td> <td>na</td> <td>na</td> <td>0.084</td> <td>0.048</td> <td>0.015</td> <td>na</td> <td>0.088</td>	M01N09HY	SCREE/100 (5)	na	na	na	na		na	na	na		na	na	na	0.084	0.048	0.015	na	0.088
SCREE/100 (5) na na na na na T131 na na na na na T131 (7) na na na na na T131 (8) na na na na na T131 (8) na na na na na T135 (10) 9.4 10.0 11.0 67.8 59 T135 (10) 9.4 10.0 11.0 67.8 59 T135 (11) 9.4 10.0 11.0 67.8 59 T137 (8) na na na na na T137 (8) na na na na na T137 (8) na na na na na T143 (8) na na na na na T143 (8) na na na na na T143 (8) na na na na na	M01N16HY	SCREE/100 (5)	na	na	na	na		na	na	na		na	na	na	0.088	0.047	0.015	na	0.094
T131 na na na na na na T131(3) na na na na na na T131(8) na na na na na na T135(10) 9.4 10.0 11.0 67.8 59 79 T135(10) 9.5 10.0 11.0 67 57 79 T135(10) 9.4 10.0 11.0 67 58 58 58 76 78 76 78 76 78 76 78 76 78 76 78 76 78 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 7	M01N20HY	SCREE/100 (5)	na	na	na	na		na	na	na		na	na	na	0.081	0.046	0.016	na	0.088
T131 (7) na na na na T131 (8) na na na na T131 (8) na na na na T135 10.5 10 13.1 67.8 59 T135 (10) 9.4 10.0 11.0 67 57 T135 (11) 9.4 10.0 11.0 66 58 T137 (9) na na na na na T137 (8) na na na na na T143 (8) na na na na na T144 (10) 13 2.3 50 73 16 T144 (10) 13		TI3I	па	na	na	na		30.6		na		na	па	na	na	па	na	90.7	na
T131 (8) na na na na T135 10.5 10 13.1 67.8 59 T135 (10) 9.4 10.0 11.0 67.8 59 T135 (10) 9.4 10.0 11.0 67.8 58 T135 (11) 9.4 10.0 11.0 66 58 T137 (3) na na na na na T137 (8) na na na na na T137 (8) na na na na na T143 (9) na na na na na T144 (10) 13 2.3 50 73 16 T149 (18) 38 0.93 127 44 na	A01025HY	T131 (7)	na	na	na	na		31		na		na	na	na	na	na	na	94	na
T135 10.5 10 13.1 67.8 59 T135 (10) 9.4 10.0 11.0 67 57 T135 (10) 9.5 10.0 11.0 66 58 T135 (11) 9.4 10.0 11.0 66 58 T137 (3) na na na na na T137 (3) na na na na na T143 (8) na na na na na T143 (9) na na na na na T143 (9) na na na na na T147 (10) 13 2.3 50 73 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (19) 37 0.90 129 43 na T149 (19) na na na na <td>A01N09HY</td> <td>T131(8)</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td></td> <td>32</td> <td></td> <td>na</td> <td></td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>92</td> <td>na</td>	A01N09HY	T131(8)	na	na	na	na		32		na		na	na	na	na	na	na	92	na
T135 (10) 9.4 10.0 11.0 67 57 T135 (10) 9.5 10.0 10.5 68 58 T135 (11) 9.4 10.0 11.0 66 58 T137 (8) na na na na na T137 (8) na na na na na T143 na na na na na T143 (8) na na na na na T143 (9) na na na na na T144 (10) 13 2.4 50 75 16 T144 (10) 35.5 0.98 128 42.5 na T149 (18) 38 0.90 129 43 na </td <td></td> <td>T135</td> <td>10.5</td> <td>0I</td> <td>13.1</td> <td>8.79</td> <td></td> <td>na</td> <td></td> <td>na</td> <td></td> <td>40</td> <td>26</td> <td>9</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td> <td>na</td>		T135	10.5	0I	13.1	8.79		na		na		40	26	9	na	na	na	na	na
T135 (10) 9.5 10.0 10.5 68 58 T135 (11) 9.4 10.0 11.0 66 58 T137 (8) na na na na na T137 (8) na na na na na T143 na na na na na T143 (8) na na na na na T143 (9) na na na na na T144 (10) 13 2.4 50 73 16 T144 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (19) 37 0.90 129 43 na	M01N09HY	T135 (10)	9.4	10.0	11.0	<i>L</i> 9		na		na		40	77	62	na	na	na	na	na
T135 (11) 9.4 10.0 11.0 66 58 T137 na na na na na T137 (8) na na na na na T143 (8) na na na na na T143 (8) na na na na na T143 (9) na na na na na T143 (9) na na na na na T143 (9) na na na na na T144 (10) 13 2.39 50 73 16 T144 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (19) 37 0.90 127 43 na T149 (19) na na na na T151 na na na na	M01N16HY	T135 (10)	9.5	10.0	10.5	89		na		na		40	78	62	na	na	na	na	na
T137 na na na na T137 (8) na na na na T137 (9) na na na na T143 (8) na na na na T143 (8) na na na na T143 (9) na na na na T147 (10) 13 2.3 50 73 16 T147 (11) 13 2.4 50 73 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (19) 38 0.90 129 43 na T151 na na na na na	M01N20HY	T135 (11)	9.4	10.0	11.0	99		na		na		40	78	62	na	na	na	na	na
T137 (8) na na na na T137 (9) na na na na T143 na na na na T143 (8) na na na na T143 (9) na na na na T147 (10) 13 2.3 50 73 16 T147 (10) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T144 (11) 35.5 0.98 128 42.5 na T149 (18) 38 0.99 129 43 na T149 (19) 37 0.90 127 43 na T151 na na na na		T137	па	na	na	na		38.1		na		na	па	na	na	na	na	7.1	na
T137 (9) na na na na na T143 na na na na T143 (8) na na na na T143 (8) na na na na T143 (9) na na na na T147 (10) 13 2.3 50 73 16 T147 (11) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 37 0.90 127 43 na T151 na na na na na	A01025HY	T137 (8)	na	na	na	na		38		na		na	na	na	na	na	na	69	na
T143 na na na na na T143 (8) na na na na T143 (8) na na na na T143 (9) na na na na T147 (10) 13 2.3 50 73 16 T147 (11) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T151 na na na na na	A01N09HY	T137 (9)	na	na	na	na		37		na		na	na	na	na	na	na	69	na
T143 (8) na na na na T143 (9) na na na na T143 (9) na na na na T147 13 2.3 50 73 16 T147 (10) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T151 na na na na na		T143	па	na	na	na		53.7		na		na	na	na	na	па	na	222	na
T143 (9) na na na na T147 14 2.39 50 73 16 T147 (10) 13 2.3 51 75 16 T147 (11) 13 2.4 50 73 16 T149 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 37 0.90 129 43 na T151 na na na na na	A01025HY	T143 (8)	na	na	na	na		52		na		na	na	na	na	na	na	215	na
T147 14 2.39 50 73 16 T147 (10) 13 2.3 51 75 16 T147 (10) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (19) 38 0.90 127 44 na T151 na na na na na T151 (8) na na na na na	A01N09HY	T143 (9)	na	na	na	na		53		na		na	na	na	na	na	na	206	na
T147 (10) 13 2.3 51 75 16 T147 (10) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 (18) 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T151 na na na na na T151 (8) na na na na na		T147	14	2.39	20	73		na	15.9	na		na	12.8	11.4	na	na	na	na	na
T147 (10) 13 2.4 52 76 16 T147 (11) 13 2.4 50 73 16 T149 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T151 na na na na na T151 (8) na na na na	M01N09HY	T147 (10)	13	2.3	51	75		na	16	na		na	12	11.4	na	na	na	na	na
T147 (11) 13 2.4 50 73 16 T149 35.5 0.98 128 42.5 na T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T151 na na na na na T151 (8) na na na na na	M01N16HY	T147 (10)	13	2.4	52	9/		na	16	na		na	12	11.1	na	na	na	na	na
T149 35.5 0.98 128 42.5 na T149(18) 38 0.93 127 44 na T149(19) 38 0.90 129 43 na T151 na na na na na T151(8) na na na na na	M01N20HY	T147 (11)	13	2.4	20	73		na	16	na		na	12	11.4	na	na	na	na	na
T149 (18) 38 0.93 127 44 na T149 (19) 38 0.90 129 43 na T149 (19) 37 0.90 127 43 na T151 na na na na na T151 (8) na na na na na		T149	35.5	0.98	128	42.5		na	2.18	na	na	na	48.8	5	na	na	na	na	na
T149 (19) 38 0.90 129 43 na T149 (19) 37 0.90 127 43 na T151 na na na na na T151 (8) na na na na	M01N16HY	T149 (18)	38	0.93	127	4		na	2.2	na	na	na	49	7.5	na	na	na	na	na
T149 (19) 37 0.90 127 43 na T151 na	M01N09HY	T149 (19)	38	06.0	129	43		na	2.2	na	na	na	49	7.6	na	na	na	na	na
T151 (8) na na na na na na	M01N20HY	T149 (19)	37	0.90	127	43		na	2.2	na		na	49	7.6	na	na	na	na	na
T151(8) na na na na		TI5I	па	na	na	na		37.9	na	na		na	па	na	na	na	па	0I	na
	A01025HY	T151(8)	na	na	na	na		38	na	na	na	6.6	na						
T151(9) na na na na	A01N09HY	T151(9)	na	na	na	na	na	37	na	na		na	na	na	na	na	na	10.3	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Analysis Standard ¹	Al	As	В	Ba	Be	Ca	Cq	C	Ce	Co	Cr	Cī	Dy	Er	Eu	Fe	РŊ
Run		$\mu g/L$	µg/L	$\mu g/L$	ug/L	μg/L	mg/L	µg/L	mg/L	μg/L	μg/L	µg/L	ug/L	µg/L	µg/L	$\mu g/L$	µg/L	ug/L
	T153	na	na	na	na	na	27.5	na	na	na	na	na	ua	na	na	na	75	na
A01025HY T153 (20)	T153 (20)	na	na	na	na	na	27	na	75	na								
A01N09HY	T153 (22)	na	na	na	na	na	28	na	75	na								
	T155	na	na	na	na	na	42	na	na	na	па	na	na	па	па	na	88	па
A01025HY	T155(7)	na	na	na	na	na	34	na	92	na								
A01N09HY	T155(7)	na	na	na	na	na	43	na	98	na								
	T157	55.5	25.4	70.4	II8	13	61.9	5.8	na	na	4.03	31.3	24.8	па	па	na	92	па
M01N20HY	T157 (10)	99	25	70	119	13	na	5.9	na	na	4.2	32	25	na	na	na	na	na
M01N09HY	T157 (9)	57	25	89	118	13	na	5.8	na	na	4.2	32	25	na	na	na	na	na
M01N16HY	T157 (9)	57	25	70	122	13	na	5.8	na	na	4.1	32	24	na	na	na	na	na
A01025HY	T157 (7)	na	na	na	na	na	6.2	na	80	na								
A01N09HY	T157(8)	na	na	na	na	na	6.7	na	82	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

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Run H02807HY H02808HY		g L	110	4	Га	ĭ	Γn	Mg	Mn	Mo	NH_4	NO_3	Na	N	Z	PO_4	Pb	I
H02807HY H02808HY		ng/L	µg/L	mg/L	μg/L	µg/L	μg/L	mg/L	$\mu g/L$	µg/L	mg N/L	mg N/L	mg/L	μg/L	µg/L	mg P/L	$\mu g/L$	µg/L
H02807HY H02808HY	$H_{\rm g7/100}$	2.2	na	na	na	na	na	па	na	na	na	na						
H02808HY	Hg7/100(9)	3.0	na	na	na	na	na	na	na	na	na	na						
	Hg7/100 (10)	2.9	na	na	na	na	na	na	na	na	na	na						
	Hg15/100	4.1	na	па	na	na	па	па	na	па	na	na						
H02807HY	Hg15/100 (10)	4.3	na	na	na	na	na	na	na	na	na	na						
H02808HY	Hg15/100 (10)	3.6	na	na	na	na	na	na	na	na	na	na						
	Hg22/100	12.4	na	na	na	na	na	па	na	па	na	na						
H02807HY	Hg22/100(9)	11.9	na	na	na	na	na	na	na	na	na	na						
H02808HY	Hg22/100 (10)	12.2	na	na	na	na	na	na	na	na	na	na						
	Hg26/100	7.0	na	na	na	па	na	na	na	па	па	na	na	па	na	па	na	па
H02807HY	Hg26/100 (10)	7.7	na	na	na	na	na	na	na	na	na	na						
H02808HY	Hg26/100 (10)	7.5	na	na	na	na	na	na	na	na	na	na						
	M98	па	na	na	па	na	па	па	па	па	na	na						
I01927HY	M98 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	M98 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
% I01002HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M106	па	na	па	na	na	па	па	na	па	na	na						
I01928HY	M106(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	M106 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	MII0	па	na	na	na	na	na	na	na	па	na	na						
I01927HY	M110(7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M136	па	na	па	na	na	па	па	na	па	na	na						
B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M136 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M140	па	na	па	na	na	па	па	na	па	na	na						
B01N05HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M140(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M140(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

	Ţ									_,											_	_			_								
Pr	l/gµ	па	na	na	na	na	na	na	na	na	na	na	na	na	па	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Pb	µg/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.815	1.88	1.88
PO_4	mg P/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.80	0.742	na	na	na	0.086	na	0.050	0.583	na	0.651	na	na	na	na
Ņ	µg/L	ua	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.8I	5.9	5.8
pΝ	µg/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Na	mg/L	ua	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
NO_3	ng N/L	na	na	na	na	na	na	na	na	na	na	na	na	na	0.92	0.83	0.91	0.86	1.68	1.67	1.74	1.71	1.70	0.084	na	0.078	0.99	na	0.93	0.98	na	na	na
NH_4	mg N/L r	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.480	0.460	na	na	na	0.086	0.067	0.068	0.580	0.580	0.578	na	na	na	na
Mo	ug/L		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	па	na	na	na	na	na	na	na	na	na	na	na	11.29	11.5	11.2
Mn	μg/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	па	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Mg	mg/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Lu	μg/L	ua	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Li	ug/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.65	1.73	1.72
La	µg/L	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
K	mg/L	па	na	na	na	na	na	na	па	na	na	па	na	na	па	na	na	na	па	na	na	na	na	па	na	na	па	na	na	na	па	na	na
Но	$\mu g/L$	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg	ng/L	na	na	na	na	na	na	na	па	na	na	па	na	na	па	na	na	na	па	na	na	na	na	па	na	na	па	na	na	na	па	na	na
Standard ¹		M142	M142 (2)	M142 (1)	M142 (2)	M142(4)	M142(2)	M142 (2)	M144	M144 (4)	M144 (4)	M146	M146(7)	M146 (6)	N62	N62 (1)	N62 (1)	N62 (1)	N68	N68 (5)	N68 (1)	N68 (1)	N68 (1)	N69	N69 (11)	N69 (10)	N70	N70 (12)	N70 (11)	N70 (1)	NIST1643d/10	NIST1643d/10 (10)	NIST1643d/10(9)
Analysis	Run		B01N05HY	B01N07HY	B01N14HY	B01N19HY	B01N26HY	B01N28HY		I01928HY	I01002HY		I01928HY	I01002HY		S 101927HY	I01928HY	I01002HY		N01003HY	I01927HY	I01928HY	I01002HY		N01926HY	N01003HY		N01926HY	N01003HY	I01002HY		M01N16HY	M01N09HY

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	X	La	Ľ	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	pΝ	ï	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	μg/L	μg/L	μg/L	mg/L	µg/L	ng/L	mg N/L	mg N/L	mg/L	μg/L	µg/L ₁	mg P/L	µg/L	μg/L
	PPREE/100	na	0.0443	na	0.804		0.01111	na	na	na	na	na	na	0.934	na	na	na	0.212
M01N09HY	PPREE/100 (6)	na	0.044	na	0.80	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
M01N16HY	PPREE/100 (6)	na	0.045	na	0.80		0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
M01N20HY	PPREE/100 (6)	na	0.044	na	0.80		0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
	SCREE/100	па	0.0162	па	0.099		0.00453	na	na	na	na	na	na	0.222	na	па	па	0.043I
M01N09HY		na	0.016	na	0.10	na	0.0045	na	na	na	na	na	na	0.23	na	na	na	0.045
M01N16HY	SCREE/100 (5)	na	0.017	na	0.11	na	0.0045	na	na	na	na	na	na	0.24	na	na	na	0.046
M01N20HY	SCREE/100 (5)	na	0.017	na	0.11	na	0.0047	na	na	na	na	na	na	0.23	na	na	na	0.044
	TI31	па	na	2.39	na	na	na	8	37.8	na	na	na	21.4	па	na	па	па	na
A01025HY	T131 (7)	na	na	2.4	na	na	na	7.9	38	na	na	na	21	na	na	na	na	na
A01N09HY	T131 (8)	na	na	2.4	na	na	na	8.1	40	na	na	na	22	na	na	na	na	na
	TI 35	па	na	па	na	73.7	па	na	na	63	na	na	na	na	65.6	na	103	na
M01N09HY	T135 (10)	na	na	na	na	73	na	na	na	63	na	na	na	na	65	na	103	na
M01N16HY	T135 (10)	na	na	na	na	73	na	na	na	63	na	na	na	na	99	na	103	na
02 M01N20HY		na	na	na	na	70	na	na	na	63	na	na	na	na	99	na	103	na
	TI 37	па	na	I.19	na	na	па	I0.I	86	na	na	na	22	па	na	na	па	na
A01025HY	T137 (8)	na	na	1.2	na	na	na	10.0	96	na	na	na	21	na	na	na	na	na
A01N09HY	T137 (9)	na	na	1.2	na	na	na	6.7	100	na	na	na	21	na	na	na	na	na
	T143	па	na	2.5	na	na	па	10.4	18.2	na	na	na	34	па	na	na	па	na
A01025HY	T143 (8)	na	na	2.5	na	na	na	10.2	18	na	na	na	33	na	na	na	na	na
A01N09HY	T143 (9)	na	na	2.4	na	na	na	10.1	19	na	na	na	33	na	na	na	na	na
	T147	па	na	na	па	I8	па	па	na	II.8	na	na	na	па	13.6	na	13.8	na
M01N09HY		na	na	na	na	17	na	na	na	12	na	na	na	na	13	na	14	na
M01N16HY	T147	na	na	na	na	18	na	na	na	12	na	na	na	na	13	na	14	na
M01N20HY	T147 (11)	na	na	na	na	18	na	na	na	12	na	na	na	na	4	na	14	na
	TI 49	па	na	na	па	44.2	па	па	na	1.25	na	na	na	па	31.2	na	8.84	na
M01N16HY	-	na	na	na	na	4	na	na	na	1.1	na	na	na	na	32	na	9.1	na
M01N09HY	T149 (19)	na	na	na	na	4	na	na	na	1.1	na	na	na	na	32	na	9.5	na
M01N20HY		na	na	na	na	4	na	na	na	1.1	na	na	na	na	32	na	9.1	na
	TI5I	па	na	1.95	па	na	па	17.5	13	па	na	na	55	па	na	na	па	na
A01025HY	T151 (8)	na	na	2.0	na	na	na	17	13	na	na	na	27	na	na	na	na	na
A01N09HY	T151 (9)	na	na	1.9	na	na	na	17	14	na	na	na	99	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	X	La	Ľ	Lu	Mg	Mn	Мо	NH_4	NO_3	Na	pN	ïZ	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	μg/L	µg/L 1	mg N/L 1		mg/L	µg/L	ug/L r	mg P/L	ug/L	ug/L
	T153	na	na	9.1	na	na	na	8.72			na	na	28.7	na	na	na	na	na
A01025HY T	T153 (20)	na	na	1.6	na	na	na	8.7	74	na	na	na	28	na	na	na	na	na
A01N09HY T	T153 (22)	na	na	1.6	na	na	na	8.7	79	na	na	na	29	na	na	na	na	na
I	7155	na	na	5.64	na	na	na	II.I	50.9	na	na	na	28.4	na	na	na	na	na
A01025HY T	[155 (7)	na	na	4.7	na	na	na	8.9	41	na	na	na	22	na	na	na	na	na
A01N09HY T	T155 (7)	na	na	5.6	na	na	na	11.0	54	na	na	na	28	na	na	na	na	na
I	1157	na	na	2.51	na	32.4	na	I.03	143	13	na	na	60.7	na	30	na	6.9	na
M01N20HY T	T157 (10)	na	na	na	na	33	na	na	na	12	na	na	na	na	34	na	6.9	na
M01N09HY T	T157 (9)	na	na	na	na	33	na	na	na	12	na	na	na	na	34	na	6.9	na
M01N16HY T	T157 (9)	na	na	na	na	33	na	na	na	11	na	na	na	na	33	na	6.7	na
A01025HY T	T157 (7)	na	na	2.5	na	na	na	1.01	132	na	na	na	61	na	na	na	na	na
A01N09HY T	T157 (8)	na	na	2.7	na	na	na	1.09	137	na	na	na	65	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Hig/L Hig/L <th< th=""><th>Analysis</th><th>Standard¹</th><th>SO_4</th><th>Sb</th><th>Se</th><th>SiO_2</th><th>Sm</th><th>Sr</th><th>Tb</th><th>П</th><th>Tm</th><th>Ω</th><th>Λ</th><th>Y</th><th>Yb</th><th>Zn</th><th>Alkalinity</th></th<>	Analysis	Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	П	Tm	Ω	Λ	Y	Yb	Zn	Alkalinity
Hg/71000	Run		mg/L	µg/L	µg/L	mg/L	µg/L	med/L									
(Hg2/100(10) na		$H_87/100$	na	па	na	na	па	na	па	na							
Hg/5/100(10) na	H02807HY	Hg7/100(9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
High Strong (10) na	H02808HY	Hg7/100(10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Hg15/100	na	па	па	na	na	na	na	na	па	na	na	па	na	па	na
Hg25/100(10) na	H02807HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg227/100 na	H02808HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
HEAZ-100 (9) na		Hg22/100	na	na	па	na	na	na	na	na	па	na	na	па	na	па	na
Hg22/100 (10) na	H02807HY	Hg22/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg26/1000 na	H02808HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Hg26/100(10) na		Hg26/100	na	па	na	na	na	na	na	na	na	na	na	па	na	па	na
Hg26/100 (10) na	H02807HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M98 41.5 na	H02808HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M98 (7) 41.2 na		M98	41.5	па	na	na	na	na	na	na	na	na	na	па	na	па	na
M98 (4) 40,4 na	I01927HY	M98 (7)	41.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M98 (3) 39,6 na	I01928HY	M98 (4)	40.4		na	na	na	na	na	na	na	na	na	na	na	na	na
M106 (4) 27.6 na	I01002HY	M98 (3)	39.6		na	na	na	na	na	na	na	na	na	na	na	na	na
MI06 (4) 28.4 na		M106	27.6		па	na	na	па	na	na	па	na	па	па	na	па	na
MI06 (3) 27.9 na	I01928HY	M106(4)	28.4		na	na	na	na	na	na	na	na	na	na	na	na	na
MII0 7 64 na	I01002HY	M106(3)	27.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M110 (7) 63.8 na		M110	64	na	na	na	na	na	na	na	па	na	na	па	na	па	na
MI36 (2) na <	I01927HY	M110(7)	63.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na
M136 (2) na <		M136	na	na	па	na	na	na	na	na	па	na	na	па	na	па	3.04
M136 (1) na <	B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.96
M136 (2) na <	B01N07HY	M136(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.10
M136 (2) na <	B01N14HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.78
M136 (2) na <	B01N19HY	M136 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.77
M136 (2) na <	B01N26HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.04
M140 na n	B01N28HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.06
M140 (2) na <		MI40	na	па	na	na	na	па	na	na	na	na	na	па	na	па	2.28
M140(1) na	B01N05HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.21
M140 (2) na	B01N07HY	M140(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.04
M140 (4) na	B01N14HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.09
M140(2) na	B01N19HY	M140(4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.08
M140(2) na	B01N26HY	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.28
	B01N28HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.28

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	SO_4	$^{\mathrm{Sp}}$	Se	SiO_2	Sm	Sr	Tb	П	Tm	Ω	>	Y	Yb	Zn	Alkalinity
Run		mg/L	µg/L	hg/L	mg/L	µg/L	µg/L	µg/L	µg/L	hg/L	µg/L	µg/L	µg/L	µg/L	µg/L	med/L
	M142	па	na	na	na	na	na	na	па	па	na	na	na	na	na	3.60
B01N05HY	M142(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.53
B01N07HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.62
B01N14HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.31
B01N19HY	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.30
B01N26HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.61
B01N28HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.67
	M144	210	па	па	na	na	na	na	па	па	na	na	па	па	па	па
I01928HY	M144 (4)	216	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	M144 (4)	211	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M146	0.69	па	па	na	na	na	па	па	па	na	na	па	па	па	па
I01928HY	M146(7)	68.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	M146 (6)	0.69	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N62	па	па	па	na	na	na	па	па	па	na	na	па	па	па	па
I01927HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
101O02HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N68	na	na	па	na	na	na	па	па	па	na	na	na	na	na	па
N01003HY	N68 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01927HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N69	na	na	na	па	na	па	na	na	па	na	na	na	na	na	na
N01926HY	N69 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01003HY	N69 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N70	na	na	па	na	na	na	na	na	па	na	na	na	na	na	па
N01926HY	N70(12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01003HY	N70 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	N70 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	NIST1643d/10	na	5.41	1.143	na	na	29.48	па	0.728	па	na	3.51	па	na	7.248	na
M01N16HY	NIST1643d/10 (10)	na	5.4	1.02	na	na	29	na	0.72	na	na	3.5	na	na	7.4	na
M01N09HY	NIST1643d/10 (9)	na	5.3	1.04	na	na	29	na	0.73	na	na	3.6	na	na	7.1	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	П	Tm		>	Y	Yb	,	Alkalinity
Run		mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	μg/L	µg/L	μg/L	meq/L
	PPREE/100	na	na	na	na	0.204	na	0.0367	na	0.0148		na	1.348	0.0818	na	na
M01N09HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.35	0.082	na	na
M01N16HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.036	na	0.015	na	na	1.33	0.082	na	na
M01N20HY	PPREE/100 (6)	na	na	na	na	0.21	na	0.037	na	0.015	na	na	1.34	0.082	na	na
	SCREE/100	na	na	na	na	0.0674	na	0.0134	na	0.00585	na	na	0.472	0.034	na	na
M01N09HY	SCREE/100 (5)	na	na	na	na	0.073	na	0.014	na	0.0062		na	0.48	0.035	na	na
M01N16HY	SCREE/100 (5)	na	na	na	na	0.075	na	0.014	na	0.0063	na	na	0.48	0.035	na	na
M01N20HY	SCREE/100 (5)	na	na	na	na	0.069	na	0.014	na	0.0057	na	na	0.48	0.034	na	na
	TI31	na	па	па	5.8	па	па	па	па	па	na	na	na	na	па	па
A01025HY	T131(7)	na	na	na	0.9	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T131(8)	na	na	na	0.9	na	na	na	na	na	na	na	na	na	na	na
	T135	na	76.3	I0	na	na	46	па	na	па	na	52.8	na	na	48.2	na
M01N09HY	T135 (10)	na	9/	9.7	na	na	47	na	na	na	na	53	na	na	48	na
M01N16HY	T135 (10)	na	77	9.6	na	na	46	na	na	na	na	54	na	na	49	na
M01N20HY	T135 (11)	na	77	10.0	na	na	46	na	na	na	na	53	na	na	48	na
	T137	na	па	па	96.9	na	па	па	па	па	na	na	na	na	па	па
A01025HY	T137 (8)	na	na	na	7.0	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T137(9)	na	na	na	8.9	na	na	na	na	na	na	na	na	na	na	na
	T143	na	па	na	23.4	па	па	па	па	па	na	na	na	na	па	па
A01025HY	T143(8)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T143(9)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
	T147	na	10.5	10.1	na	па	313	па	20	па	3.21	15.2	na	na	14	па
M01N09HY	T147 (10)	na	10.4	10.7	na	na	313	na	19	na	3.2	15	na	na	14	na
M01N16HY	T147 (10)	na	10.3	10.9	na	na	315	na	19	na	3.2	15	na	na	14	na
M01N20HY	T147 (11)	na	10.2	10.5	na	na	312	na	19	na	3.2	15	na	na	14	na
	T149	na	2I.I	2.1	na	па	33I	па	31.4	па	2.71	31	па	na	5.8	na
M01N16HY	T149 (18)	na	21	1.9	na	na	331	na	32	na	2.6	31	na	na	5.3	na
M01N09HY	T149 (19)	na	21	1.9	na	na	332	na	31	na	2.6	31	na	na	4.5	na
M01N20HY	T149 (19)	na	21	1.6	na	na	331	na	31	na	2.6	31	na	na	4.2	na
	T15I	па	па	na	1.43	па	па	па	na	па	na	na	па	na	па	na
A01025HY	T151(8)	na	na	na	1.5	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T151(9)	na	na	na	1.4	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Analysis Standard ¹	SO_4 Sb		Se	SiO_2	Sm	Sr	Tb	П	Tm	Ω	Λ	Y	Yb	Zn	Alkalinity
Run		mg/L	mg/L µg/L µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	$\mu g/L$	$\mu g/L$	μg/L	µg/L	µg/L	µg/L	meq/L
	T153	na	na	па	5.79	na	na	na	na	па	na	na	na	na	na	na
A01025HY T153 (20)	T153 (20)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T153 (22)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
	T155	na	na	na	10.2	na	na	na	na	па	na	na	na	na	na	па
	T155(7)	na	na	na	8.2	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T155 (7)	na	na	na	10.1	na	na	na	na	na	na		na	na	na	na
	T157	na	10.8	4.6	14.2	na	59.6	na	8.75	па	3.19	15.7	na	na	23.5	па
M01N20HY	T157 (10)	na	10.7	4.1	na	na	09	na	8.6	na	3.3		na	na	23	na
M01N09HY	T157(9)	na	10.6	4.1	na	na	59	na	8.6	na	3.2	16	na	na	23	na
M01N16HY	T157 (9)	na	10.6	4.0	na	na	58	na	8.5	na	3.2	15	na	na	23	na
A01025HY	T157(7)	na	na	na	14	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T157(8)	na	na	na	15	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Al	As	В	Ba	Be	Ca	ρ	Ce	Ū	Co	Ċ	Cn	Dv	Ē	En	Fe	Cq
Run		µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	ng/L	µg/L	J	,	ng/L	ng/L	ug/L	ng/L	µg/L	ng/L	ng/L
	Hg7/100	na	na	па	na	na	na	na	na			na						
H02902HY	Hg7/100(10)	na	na	na	na	na	na	na	na	na								
	Hg15/100	na	па	na	па	na	na	na	na	na	na	na	па	na	па	na	na	па
H02902HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na								
	$H_{8}22/100$	na	па	na	па	na	na	na	na	па								
H02902HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na								
	Hg26/100	na	na	na	na	na	na	па	na	na	na	na	па	na	na	na	na	па
H02902HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na								
	96W	na	38.6	na	na	па	na	na	na	na	па							
I02419HY	M96 (2)	na	37.6	na	na	na	na	na	na	na	na							
	<i>M</i> 98	na	32.5	na	na	па	na	na	na	na	па							
I02419HY	M98 (1)	na	34.1	na	na	na	na	na	na	na	na							
	M106	na	па	ua	na	na	na	na	na	13	na	na	na	na	na	na	na	па
I02419HY	M106 (1)	na	12.4	na	na	na	na	na	na	na	na							
	M130	na	na	na	па	na	na	na	na	na	na	na	па	na	na	na	na	па
B02510HY	M130 (2)	na	na	na	na	na	na	na	na	na								
B02510H1	M130 (2)	na	na	na	na	na	na	na	na	na								
B02510H2	M130 (2)	na	na	na	na	na	na	na	na	na								
	M136	na	na	na	па	na	na	na	na	92	na	na	па	na	na	na	na	па
I02419HY	M136 (1)	na	na	na	na	na	na	na	na	na								
I02422HY	M136 (2)	na	93	na	na	na	na	na	na	na	na							
	M138	na	na	na	па	na	na	na	na	33.4	na	na	па	na	na	na	na	па
I02422HY	M138 (1)	na	35	na	na	na	na	na	na	na	na							
	MI40	na	па	na	па	na	na	na	na	па								
B02510HY	M140(2)	na	na	na	na	na	na	na	na	na								
B02510H1	M140(2)	na	na	na	na	na	na	na	na	na								
B02510H2	M140(2)	na	na	na	na	na	na	na	na	na								
	M142	na	па	па	na	na	na	na	na	132	па	na	па	na	па	na	na	па
I02422HY	M142 (1)	na	127	na	na	na	na	na	na	na	na							
B02510HY	M142(2)	na	na	na	na	na	na	na	na	na								
B02510H1	M142 (2)	na	na	na	na	na	na	na	na	na								
B02510H2	M142 (4)	na	na	na	na	na	na	na	na	na								

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Al	As	В	Ba		Ca	Cd	Ce	\Box	Co	Cr	Cu	Dy	Er	Eu	Fe	рŊ
Run		µg/L	µg/L	µg/L	hg/L	ng/L	mg/L	ng/L	,	ت	ng/L	1	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
	M144	na	na	na	na		па	na			па		па	na	na	na	na	na
I02419HY	M144 (3)	na	na	na	na	na	na	na	na	75.8	na	na	na	na	na	na	na	na
I02422HY	M144 (3)	na	na	na	na	na	na	na	na	75	na	na	na	na	na	na	na	na
	M146	na	na	na	na	na	na	na	na	46.1	na	na	na	na	па	na	na	na
I02422HY	M146(2)	na	na	na	na	na	na	na	na	49	na	na	na	na	na	na	na	na
	M148	na	na	па	na	па	na	na	na	46	na		na	na	па	na	na	na
I02419HY	M148 (1)	na	na	na	na	na	na	na	na	46.5	na		na	na	na	na	na	na
	M150	na	na	na	na	na	na	na	na	17	na		na	na	na	na	na	па
I02422HY	M150 (1)	na	na	na	na	na	na	na	na	16.6	na		na	na	na	na	na	na
	N60	na	na	na	na	na	na	na	na	na	na		na	na	па	na	na	na
N02410HY	N60 (1)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
I02419HY	N60 (3)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
	N62	па	na	па	na	na	na	na	na	na	na		na	па	na	na	na	па
I02419HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N63	na	na	na	na	na	na	na	na	na	na		na	na	па	na	na	na
I02422HY	N63 (1)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
	N64	na	na	na	na	na	na	na	na	па	na		na	na	па	na	na	па
I02419HY	N64 (1)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
	N68	na	na	па	na	na	na	na	па	na	na		na	na	па	na	na	па
I02419HY	N68 (1)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
	69N	na	na	па	na	па	na	na	na	па	na		na	na	па	na	na	na
N02410HY	(9) 69N	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
	N70	na	na	па	na	па	na	na	na	na	na		na	na	па	na	na	па
N02410HY	N70 (7)	na	na	na	na	na	na	na	na	na	na		na	na	na	na	na	na
		12.76	5.602	па	50.65	1.253	na	0.647	na	па	2.5		2.05	na	па	na	na	na
M02823HY		12.2	5.4	na	51	1.20	na	0.43	na	na	2.4	_	2.1	na	na	na	na	na
	PPREE/100	na	na	па	na	na	na	па	I.63	na	na		па	0.22	0.12	90.0	na	0.24
M02823HY	PPREE/100 (5)	na	na	na	na	na	na	na	1.63	na	na		na	0.22	0.120	0.060	na	0.24
	SCREE/100	na	na	na	na	na	na	na	0.246	na	na		na	0.0814	0.0437	0.0148	na	0.0829
M02823HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na		na	0.082	0.044	0.015	na	0.085
	T135	10.5	10	na	8.29	29	na	50.5	na	па	40		62	na	па	па	na	na
M02823HY	T135(8)	11.2	10.6	na	69	59	na	51	na	na	40	79	62	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹ Al As B Ba	Al	As	В	Ba	Be	Ca	Cd	ဗ	IJ	ပိ	Ç	Cn	Dy	Ē	Eu	Fe	РУ
Run	μg/L	μg/L	μg/L	µg/L	µg/L	mg/L	μg/L	μg/L	mg/L	µg/L	µg/L	ug/L	µg/L	$\mu g/L$	$\mu g/L$	µg/L	ug/L
TI4I	na	na	59	na	na	I6I	na	na	4.3	na							
A02D12HY T141 (6)	na	na	29	na	na	19	na	na	3.2	na							
A02D16HY T141(8)	na	na	29	29 na	na	19	na	na	4.1	na							
TI43	па	na	35	na	na	53.7	na	na	222	na							
A02D12HY T143 (6)	na	na	36	na	na	54	na	na	223	na							
A02D16HY T143(8)	na	na	36	na	na	54	na	na	222	na							
T145	9.29	9.88	na	37.1	9.04	na	9.33	na	na	0I	15.3	II	na	na	na	na	na
M02823HY T145(8)	154	10.2	na	38	9.5	na	9.0	na	na	10.4	15	11.5	na	na	na	na	na
TI5I	па	na	36.3	na	na	37.9	na	па	na	na	na	na	na	па	na	0I	na
A02D12HY T151(6)	na	na	36	na	na	38	na	na	11.1	na							
A02D16HY T151(7)	na	na	38	na	na	38	na	na	7.7	na							
	35	0.50	99.4	I84	na	27.5	91	na	na	na	14.9	24	na	na	na	75	na
A02D12HY T153 (6)	na	na	66	na	na	27	na	na	77	na							
M02823HY T153 (8)	35	0.29	na	186	na	na	16	na	na	na	15	24	na	na	na	na	na
A02D16HY T153 (8)	na	na	66	na	na	27	na	na	92	na							

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	K	La	Li	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	PΝ	ï	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	μg/L	µg/L	μg/L	mg/L	µg/L	µg/L	mg N/L 1	mg N/L	mg/L	µg/L	µg/L	mg P/L	µg/L	ug/L
	$H_{8}7/100$	2.2	ua	na	na	na	na	na	na	па	na	na	na	na	na	na	na	na
H02902HY		2.9	na	na	na	na	na	na	na	na								
	Hg15/100	4.1	na	na	na	na	na	па	na	па	па	na	па	na	na	na	па	na
H02902HY	Hg15/100 (10)	3.6	na	na	na	na	na	na	na	na								
	$H_822/100$	12.4	na	na	na	na	na	па	na	па	па	na	па	na	na	па	па	na
H02902HY	Hg22/100 (10)	11.9	na	na	na	na	na	na	na	na								
	Hg26/100	7.0	na	па	na	na	па	па	na	na	па	па						
H02902HY	Hg26/100 (10)	6.7	na	na	na	na	na	na	na	na								
	M96	na	па	na	na	па	na	na	na	па	па							
I02419HY	M96(2)	na	na	na	na	na	na	na	na									
	<i>M</i> 98	na	па	па	na	па	na	na	na	па	па							
I02419HY	M98(1)	na	na	na	na	na	na	na	na									
	M106	na	na	na	na	na	na	па	na	na	na	na	па	па	na	na	па	па
I02419HY	M106(1)	na	na	na	na	na	na	na	na									
- 0	M130	na	па	na	na	па	na	na	na	па	па							
B02510HY	M130 (2)	na	na	na	na	na	na	na	na									
B02510H1	M130(2)	na	na	na	na	na	na	na	na									
B02510H2	M130 (2)	na	na	na	na	na	na	na	na									
	M136	па	na	na	na	na	na	па	па	na	па	na	па	na	na	па	па	па
I02419HY	M136(1)	na	na	na	na	na	na	na	na									
I02422HY	M136(2)	na	na	na	na	na	na	na	na									
	MI38	па	na	па	na	na	па	na	na	na	па	па						
I02422HY	M138 (1)	na	na	na	na	na	na	na	na									
	M140	na	па	na	na	па	na	na	na	па	na							
B02510HY	M140 (2)	na	na	na	na	na	na	na	na									
B02510H1	M140 (2)	na	na	na	na	na	na	na	na									
B02510H2	M140(2)	na	na	na	na	na	na	na	na									
	M142	па	na	па	na	na	па	na	na	па	па	na						
I02422HY	M142 (1)	na	na	na	na	na	na	na	na									
B02510HY	M142 (2)	na	na	na	na	na	na	na	na									
B02510H1	M142(2)	na	na	na	na	na	na	na	na									
B02510H2	M142 (4)	na	na	na	na	na	na	na	na									

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	Hg	Но	×	La	Ľ	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	pN	ïZ	PO_4	Pb	Pr
Run		ng/L	µg/L	mg/L	μg/L	ug/L	µg/L	mg/L	µg/L	ug/L]	mg N/L	mg/L	µg/L	µg/L 1	mg P/L	µg/L	ug/L
	MI44	na	na	na	na	na		na	na	na	na	na	иа	na		na	na	na
I02419HY	M144 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M144 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M146	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M146(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M148	na	na	na	na	na	na	na	na	na	na	па	na	na	na	па		na
I02419HY	M148 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na		na
	MI50	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na		na
I02422HY	M150(1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na		na
	09N	na	na	na	na	na	па	na	na	na	0.578	0.73	na	na	na	na		na
N02410HY	N60 (1)	na	na	na	na	na	na	na	na	na	0.585	na	na	na	na	na		na
I02419HY	N60 (3)	na	na	na	na	na	na	na	na	na	na	0.74	na	na	na	na		na
	N62	na	na	na	na	na	na	na	na	na	na	0.92	na	na	na	na		na
I02419HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	0.80	na	na	na	na	na	na
	N63	na	na	na	na	na	na	na	na	na	na	0.84	na	na	na	na		na
I02422HY	N63 (1)	na	na	na	na	na	na	na	na	na	na	0.73	na	na	na	na		na
	N64	na	na	na	па	na	па	na	na	na	na	1.26	na	na	na	na		na
I02419HY	N64 (1)	na	na	na	na	na	na	na	na	na	na	1.39	na	na	na	na		na
	N68	па	na	па	na	па	na	па	па	па	na	1.68	na	na	na	па		па
I02419HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	1.64	na	na	na	na		na
	N69	па	na	na	na	na	па	na	na	na	0.086	па	na	na	na	0.086		na
N02410HY	(9) 69N	na	na	na	na	na	na	na	na	na	0.079	na	na	na	na	0.089		na
	N70	па	na	па	na	па	na	na	па	na	0.580	па	na	na	na	па		na
N02410HY	N70 (7)	na	na	na	na	na	na	na	na	na	0.567	na	na	na	na	na		na
		па	na	na	na	1.65	па	na	na	11.29	na	па	na	na	5.81	na		na
M02823HY	NIST1643d/10 (8)	na	na	na	na	1.65	na	na	na	11.3	na	na	na	na	5.8	na		na
	PPREE/100	na	0.0443	na	0.804	па	0.0111	na	na	na	па	na	na	0.934	na	na		0.212
M02823HY	PPREE/100 (5)	na	0.044	na	0.80	na	0.0110	na	na	na	na	na	na	0.93	na	na	na	0.21
	SCREE/100	па	0.0162	na	0.099	na	0.00453	na	na	na	na	па	na	0.222	na	na		0.043I
M02823HY	SCREE/100 (5)	na	0.016	na	0.10	na	0.0047	na	na	na	na	na	na	0.23	na	na		0.044
	T135	na	na	па	na	73.7	па	na	na	63	na	na	na	na	65.6	na	103	na
M02823HY	T135 (8)	na	na	na	na	73	na	na	na	63	na	na	na	na	65	na		na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹ Hg Ho K La Li	Hg	Но	K	La	Li	Lu	Mg	Mn	Mo	NH_4	NO_3	Na	pN	ïZ	PO_4	Pb	Pr
Run	ng/L	$\mu g/L$	mg/L	µg/L	ug/L	µg/L	mg/L	µg/L	ug/L	mg N/L	mg N/L	mg/L	µg/L	µg/L 1	mg P/L	µg/L	ug/L
TI4I	na	na	2.32	na	na	na	5.48	20	na	na	na	33	na		na	na	na
A02D12HY T141 (6)	na	na	2.1	na	na	na	5.4	21	na	na	na	32	na	na	na	na	na
A02D16HY T141 (8)	na	na	2.2	na	na	na	5.4	23	na	na	na	32	na	na	na	na	na
T143	na	na	2.5	na	na	na	10.4	18.2	na	na	na	34	na	па	na	па	па
A02D12HY T143 (6)	na	na	2.4	na	na	na	10.5	17	na	na	na	34	na	na	na	na	na
A02D16HY T143 (8)	na	na	2.5	na	na	na	10.4	18	na	na	na	34	na	na	na	na	na
T145	na	na	na	na	27.3	na	па	na	9.23	na	na	na	na	II	na	12.7	па
M02823HY T145 (8)	na	na	na	na	28	na	na	na	8.9	na	na	na	na	11.8	na	13	na
TI5I	na	na	1.95	na	na	na	17.5	13	na	na	na	55	na	па	na	па	па
A02D12HY T151 (6)	na	na	2.0	na	na	na	18	13	na	na	na	56	na	na	na	na	na
A02D16HY T151 (7)	na	na	2.1	na	na	na	18	13	na	na	na	99	na	na	na	na	na
TI53	na	na	9.1	na	53.4	na	8.72	74.5	154	na	na	28.7	na	32.2	na	46.2	па
A02D12HY T153 (6)	na	na	1.5	na	na	na	8.6	71	na	na	na	28	na	na	na	na	na
M02823HY T153 (8)	na	na	na	na	54	na	na	na	154	na	na	na	na	33	na	46	na
A02D16HY T153 (8)	na	na	1.5	na	na	na	8.5	74	na	na	na	28	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis	Standard ¹	SO_4	Sb	Se	SiO_2	Sm	Sr	Tb	П	Tm	U	>	Y	Yb	Zn	Alkalinity
Run		mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	μg/L	µg/L	μg/L	µg/L	µg/L	meq/L
	$H_{\rm g} 7/100$	na	па	na	na	na	na	na	na	па		na	na	na	na	па
H02902HY	Hg7/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg15/100	na	па	na	na	па	na	na	na	па	na	na	na	na	па	na
H02902HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	$H_{\rm g}22/100$	na	па	na	na	па	na	na	na	па	па	na	na	na	na	na
H02902HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg26/100	na	na	na	na	па	па	na	па	na						
H02902HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M96	139	па	na	na	па	па	na	na	па	па	na	na	na	па	na
I02419HY	M96 (2)	140	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M</i> 98	41.5	па	na	na	па	па	na	na	па	па	na	na	па	na	na
I02419HY	M98 (1)	41.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M106	27.6	па	па	na	па	na	na	na	na	па	na	na	na	na	na
I02419HY	M106(1)	30.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M130	na	na	na	na	па	na	1.20								
B02510HY	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.08
B02510H1	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.09
B02510H2	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.08
	M136	150	па	na	na	па	na	na	na	па	па	na	na	na	na	na
I02419HY	M136 (1)	152	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M136 (2)	150	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	MI38	28	па	па	na	па	na	na	na	па	па	na	na	na	na	na
I02422HY	M138 (1)	29	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M140	na	па	na	na	па	па	na	na	па	па	na	na	па	na	2.28
B02510HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.20
B02510H1	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.21
B02510H2	M140(2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.21
	M142	231	па	па	na	па	na	па	3.60							
I02422HY	M142 (1)	235	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.58
B02510H1	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.66
B02510H2	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.59

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Run M144 102419HY M144 (3) 102422HY M144 (3) M146 M146 102422HY M148 (1) M148 M150 102419HY M150 (1) N02410HY N60 (3) N02419HY N60 (3) N62 102419HY N63 N63 10242HY N63 (1) N63 N63 10242HY N63 (1) N64 N64	mg/L 210 209 209 205 69 66 ma na	ug/L na	hg/L 1 na na na na	mg/L na	µg/L na	µg/L na	1	µg/L	µg/L	µg/L	µg/L	μg/L	µg/L	اد	meq/L
				na		na			<i>D u</i>	ип				Du	
	209 205 69 66 na	na	na na na					na	וומ	221	na	na	na	111	па
	205 69 66 na na na na	na	na <i>na</i> na	na	na	na	na	na	na	na	na	na	na	na	na
	69 66 70 70 70 70 70 70 70 70 70 70 70 70 70	na na	<i>na</i> na	na	na	na		na	na	na	na	na	na	na	na
	66 10 10 10 10 10 10 10 10 10	na na na na na	na	na		na		na	па	na	na	na	na	na	na
>	na na	na na na na na na na na na		na	na	na		na	na	na	na	na	na	na	na
>	na na na na na na na	na <i>na</i> na na	na	na		na		na	па	na	na			na	na
. 5 -	na na na na na	na na na na	na	na		na		na	na	na	na			na	na
. 5 4	na na na na na	na <i>na</i> na	na	na		na		na	па	na	na			na	na
S-1	na na na na	<i>na</i> na na	na	na		na		na	na	na	na			na	na
>	na na na	na na	na	na		na		na	па	na	na			na	na
	na na na	na	na	na		na		na	na	na	na			na	na
	na na na		na	na		na		na	na	na	na			na	na
	na <i>na</i>	na	na	na		na		na	па	na	na			na	na
	na	na	na	na		na	na	na	na	na	na	na	na	na	na
		na	na	na		na		na	па	na	na			na	na
N64	na	na	na	na		na		na	na	na	na			na	na
	па	na	na	na		na		na	na		na			na	na
I02419HY N64 (1)	na	na	na	na		na		na	na		na			na	na
	na	na	na	na		na		na	па		na			na	na
I02419HY N68 (1)	na	na	na	na		na		na	na		na			na	na
	па	na	na	na		na		na	па		na			na	na
N02410HY N69 (6)	na	na	na	na		na		na	na	na	na			na	na
N70	na	na	na	na		na		na	па	na	na			na	na
N02410HY N70 (7)	na	na	na	na		na		na	na		na			na	na
NIST16434/10	na		1.143	na		29.48		0.728	па	na	3.51			7.248	na
M02823HY NIST1643d/10 (8)	na	5.4	1.10	na		29		0.74	na	na	3.5			7.1	na
PPREE/100	па		na	па		na		na	0.0148	na	na			na	na
M02823HY PPREE/100 (5)	na	na	na	na		na		na	0.015	na	na			na	na
SCREE/100	na	na	na	na		na		na	0.00585	na	na			na	na
M02823HY SCREE/100(5)	na	na	na	na		na		na	0.0059	na	na			na	na
TI35	na	76.3	0I	na	na	46		na	па	na	52.8			48.2	na
M02823HY T135 (8)	na	77	10.1	na	na	47		na	na	na	53		na	46	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Standard ¹ SO ₄ Sb Se	d^1 SO_4	qS	Se	SiO_2	Sm	Sr	$^{\mathrm{Tb}}$	П	Tm	Ω	Λ	Y	$^{\mathrm{Ap}}$	Zn	Alkalinity
Run	mg/L	mg/L µg/L µg/L	µg/L	mg/L	µg/L	$\mu g/L$	ug/L	µg/L	µg/L	µg/L	μg/L	µg/L	µg/L	ug/L	med/L
TI4I		na	na	8.7	na	na	na	na	na	na	na	na	na	na	na
A02D12HY T141 (6)	na	na	na	9.0	na	na	na	na	na	na	na	na	na	na	na
A02D16HY T141 (8)	na	na	na	9.1	na	na	na	na	na	na	na	na	na	na	na
TI43	na	na	na	23.4	na	na	na	na	na	na	па	na	na	na	па
A02D12HY T143 (6)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
A02D16HY T143 (8)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
T145	na	8.8		na	па	203	na	15.3	na	I.I	11.7	na	па	0I	па
M02823HY T145 (8)	na	8.6	10.2	na	na	204	na	16	na	1.2	11.9	na	na	6.6	na
TI5I	па	na	na	1.43	na	na	na	па	na	na	na	na	па	na	па
A02D12HY T151 (6)	na	na	na	1.4	na	na	na	na	na	na	na	na	na	na	na
A02D16HY T151 (7)	na	na	na	1.5	na	na	na	na	na	na	na	na	na	na	na
TI53	na	25.7	6	5.79	па	311	na	20.4	na	6.9	6I	na	па	72.6	па
A02D12HY T153 (6)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
M02823HY T153 (8)	na	26	8.7	na	na	309	na	20	na	7.5	19	na	na	72	na
A02D16HY T153 (8)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A7. Field blank data collected during the study.

[μg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Al		As		В		Ba	-1	Be		Bi		Ca	
	µg/L	L	l/gμ	Ţ	µg/L	. 1	µg/L	Ţ	l/gµ	L	√gη	ر	I/gm	ر
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999														
DI System	< 0.07	0.05	< 0.05	0.02		0.7	0.01	0.01	< 0.02	0.03	< 0.0004	0.0002	< 0.005	0.000
Churn Blank	3.4	0.1	< 0.05	0.01	< 0.8	0.5	0.16	0.00	0.02	0.03	0.0041	0.0019	0.16	0.00
Filter Blank	0.10	0.07	< 0.05	0.01		0.4	0.03	0.00	< 0.02	0.01	0.0025	0.0016	0.01	0.01
BLANKS SEPTEMBER 1999														
DI System	< 0.1	0.0	< 0.01	0.01	4	ε	< 0.007	0.004	< 0.005	0.004	< 0.002	0.000	0.13	0.12
Store-bought "DI" water	0.3	0.0	< 0.01	0.01	< 2	7	0.12	0.01	< 0.005	0.004	< 0.002	0.004	0.03	0.03
Churn Blank	8.0	0.0	0.03	0.01	S	ε	2.1	0.1	0.005	0.002	< 0.002	0.002	1.7	0.0
Filter (only) blank	< 0.1	0.0	< 0.01	0.01	6	_	< 0.007	0.003	< 0.005	0.004	< 0.002	0.000	0.17	0.17
Process Blank	< 0.1	0.1	< 0.01	0.00	< 2	7	< 0.007	0.003	< 0.005	0.002	< 0.002	0.002	0.03	0.04
BLANKS MAY 2000														
DI System	< 0.5	0.1	< 0.03	0.04	2	_	< 0.02	0.01	< 0.004	0.003	0.0023	0.0014	< 0.02	0.01
Holding Bottle Blank	3.3	0.1	< 0.03	0.03	α	_	0.16	0.01	< 0.004	0.006	0.0013	0.0011	90.0	0.01
Churn Blank	3.6	0.2	< 0.03	0.02	3	7	0.12	0.00	< 0.004	0.001	0.0025	0.0012	90.0	0.01
Filter (only) blank	< 0.5	0.2	< 0.03	90.0	2	0	0.03	0.02	< 0.004	0.001	0.0058	0.0066	< 0.02	0.02
Process Blank	8.0	6.0	< 0.03	0.02	4	1	0.10	90.0	< 0.004	0.004	0.0039	0.0006	0.07	0.02

Table A7. Field blank data collected during the study – continued

[μg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Cd	,,,	Ce		CI	Co		ű	<u>.</u>	Cs		ĵ		DOD	C
4	hg/L	Ţ	hg/L	٦	mg/L	J/gµ	J	µg/L	Ţ	hg/L		ng/L	Ţ	mg C/L	7/C
	Avg	SD	Avg	SD	Avg	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999															
DI System	0.003	0.003	< 0.0003	0.0002	< 0.1	0.007	0.001	< 0.2		< 0.002	0.0010	< 0.03	0.02	0.12	90.0
Churn Blank	0.029	0.003	0.0070	0.0002	< 0.1	0.018	0.010	< 0.2	0.1	< 0.002	0.0015	0.11	0.02	0.24	0.02
Filter Blank	0.005	0.001	0.0004	0.0002	< 0.1	0.011	0.003	< 0.2		0.0019	0.0012	0.24	0.01	0.25	0.04
BLANKS SEPTEMBER 1999															
DI System	< 0.002	0.000	< 0.0002	0.0002	\ \	0.0009	0.0000	< 0.1	0.0	< 0.0009	0.0004	< 0.04	0.01	0.5	0.0
Store-bought "DI" water	< 0.002	0.000	< 0.0002	0.0002	> 1	0.011	0.000	< 0.1	0.0	0.0013	0.0005	91	2	0.5	0.0
Churn Blank	0.003	0.001	0.0012	0.0002	2.4	0.012	0.000	0.4	0.0	< 0.0009	0.0002	98	0	0.7	0.0
Filter (only) blank	< 0.002	0.003	< 0.0002	0.0002	<u>\</u>	0.0018	0.0007	< 0.1	0.0	< 0.0009	0.0000	< 0.04	0.01	0.7	0.0
Process Blank	0.005	0.001	< 0.0002	0.0001	<u>\ \ 1</u>	0.0010	0.0003	< 0.1	0.0	< 0.0009	0.0004	0.10	0.00	0.4	0.1
BLANKS MAY 2000															
DI System	< 0.002	0.001	0.0008	0.0003	< 0.2	0.004	0.000	< 0.1	0.1	< 0.009	0.004	< 0.02	0.00	0.27	80.0
Holding Bottle Blank	< 0.002	0.001	0.0069	0.0003	< 0.2	0.008	0.006	< 0.1	0.0	< 0.009	0.003	0.04	0.02	0.80	0.38
Churn Blank	0.004	0.004	0.0068	0.0002	< 0.2	0.007	0.001	< 0.1	0.1	< 0.009	900.0	0.04	0.02	0.28	0.05
Filter (only) blank	0.002	0.003	< 0.0004	0.0001	2.4	0.007	0.001	< 0.1	0.0	< 0.009	0.003	0.03	0.02	0.62	0.02
Process Blank	0.005	0.003	0.0027	0.0011	< 0.2	0.00	0.001	< 0.1	0.0	1.080	0.034	0.20	0.07	0.38	0.04

Table A7. Field blank data collected during the study - continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Dy	y	Er		En	ì	Fe		PS		Hg		Ho	•	K	
	µg/L	/L	µg/L	Γ	T/gn	Γ	µg/L	Ţ	√gη	ر	ng/L	را	I/gµ	L	I/gm	Γ
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.0005	0.0002	< 0.0006	0.0004	< 0.0004		0.1	0.1	< 0.0005	0.0003	na	na	< 0.0002		< 0.002	
Churn Blank	< 0.0005	0.0003	< 0.0005 0.0003 < 0.0006 0.0002	0.0002	< 0.0004	0.0003	4.1	0.4	< 0.0005	0.0002	na	na	< 0.0002		0.013	0.009
Filter Blank	< 0.0005	0.0005	< 0.0006	0.0009	< 0.0004		0.15	0.07	< 0.0005	0.0002	na	na	< 0.0002	0.0001	< 0.003	
BLANKS SEPTEMBER 1999	9															
DI System	< 0.0006	< 0.0006 0.0001	< 0.0007	0.0002		0.0001	< 0.7	0.0	< 0.0004	0.0002	<0.3	0.3		0.0001	0.009	0.011
Store-bought "DI" water	< 0.0006 0.0001		< 0.0007 0.0002	0.0002	< 0.0002	0.0000	1.1	0.5	< 0.0004	0.0000	<0.3	0.1	< 0.0001	0.0000	< 0.006	0.005
Churn Blank	< 0.0006 0.0001		< 0.0007	0.0001		0.0001	2.1	6.0	< 0.0004	0.0001	<0.3	0.2		0.0000	0.096	0.005
Filter (only) blank	< 0.0006 0.0001		< 0.0007	0.0003		0.0001	1.0	1.2	< 0.0004	0.0003	<0.3	0.1		0.0000	0.007	0.009
Process Blank	< 0.0006 0.0004		< 0.0007	0.0004		0.0002	< 0.7	0.5	< 0.0004	0.0002	0.3	0.1		0.0000	< 0.006	0.006
BLANKS MAY 2000																
28 DI System	< 0.0006	< 0.0006 0.0002	< 0.0006	0.0001	< 0.0003	0.0001	< 0.3	0.2	< 0.0005		< 0.5	0.0	< 0.0001	_	< 0.003	0.004
Holding Bottle Blank	< 0.0006 0.0002		< 0.0006 0.0002	0.0002	< 0.0003	0.0001	5.8	2.6	0.0009	0.0005	< 0.5	0.2	< 0.0001		< 0.003	0.003
Churn Blank	< 0.0006 0.0003		< 0.0006	0.0003	< 0.0003	0.0002	4.9	1.8	0.0005		< 0.4	0.1	0.0001		< 0.003	0.003
Filter (only) blank	< 0.0006 0.0004		< 0.0006	0.0001	< 0.0003	0.0001	< 0.3	1.1	< 0.0005	0.0004	< 0.5	0.1	< 0.0001	0.0000	< 0.003	0.001
Process Blank	< 0.0006 0.0002		< 0.0006	0.0003	< 0.0003	0.0001	9.0	6.0	< 0.0005	0.0004	< 0.5	0.5	< 0.0001	0.0000	0.012	0.011

Table A7. Field blank data collected during the study - continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	La	а	Li		Lu	1	Mg	bn	Mn	ı	Mo		NH_4	[4	NO_2	2
	$\mu g/L$	T	µg/L	Ţ	hg/L	Ţ	I/gm	T	1/gn	Γ	µg/L	Γ	mg N/L	1/L	mg N/L	1/L
	Avg	SD	Avg	$^{\mathrm{SD}}$	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.0002 0.0001		< 0.01 0.02	0.02	< 0.0001		< 0.002		< 0.04	0.00	0.07	0.08	0.005	0.002	< 0.001	0.000
Churn Blank	0.0035	0.0002	< 0.01	0.01	< 0.0001		0.012	0.001	0.38	0.03	90.0	0.07	< 0.002	0.001	< 0.001	0.000
Filter Blank	< 0.0002	0.0001	< 0.01	0.01	< 0.0001		< 0.004		0.14	0.01	< 0.01	0.00	< 0.002	0.002	< 0.001	0.000
BLANKS SEPTEMBER 1999	_															
DI System	< 0.0004 0.0001		0.004 0.008	0.008	< 0.0002		90.0	90.0	< 0.002	0.005	< 0.04	0.00	< 0.007	0.000	< 0.001	0.001
Store-bought "DI" water	< 0.0004	0.0000	< 0.004 0.002	0.002	< 0.0002	0.0000	< 0.02	0.00	0.56	0.04	< 0.04	0.01	< 0.007	0.000	< 0.001	0.001
Churn Blank	0.0005	0.0001	0.41	0.01	< 0.0002		0.62	0.00	1.0	0.0	0.30	0.02	< 0.007	0.001	0.024	0.033
Filter (only) blank	< 0.0004	0.0001	< 0.004 0.001	0.001	< 0.0002		0.02	0.03	0.003	0.004	< 0.04	0.02	< 0.007	0.002	< 0.001	0.000
Process Blank	< 0.0004	< 0.0004 0.0002	0.005 0.00	0.001	< 0.0002		< 0.02	0.02	0.045	0.018	< 0.04	0.01	< 0.007	0.000	< 0.001	0.001
BLANKS MAY 2000																
% DI System	< 0.0004 0.0002	0.0002	< 0.01		< 0.0001	0.0000	< 0.008	0.013	< 0.06	0.04	< 0.01	0.02	< 0.007	0.004	< 0.002	0.002
Holding Bottle Blank	0.0032	0.0006	0.05	0.02	< 0.0001	0.0001	< 0.008	0.006	0.37	90.0	< 0.01	0.02	< 0.007	0.007	< 0.002	0.001
Churn Blank	0.0031	0.0002	0.02	0.02	< 0.0001	0.0000	0.010	0.010	0.34	0.14	0.02	0.03	< 0.007	0.005	< 0.002	0.000
Filter (only) blank	< 0.0004	0.0001	0.02	0.01	< 0.0001	0.0001	< 0.008	0.008	< 0.06	0.11	0.07	90.0	< 0.007	0.010	< 0.002	0.001
Process Blank	0.0018	0.0008	< 0.01	0.01	< 0.0001	0.0002	0.027	0.024	< 0.06	0.11	0.03	0.02	< 0.007	0.005	< 0.002	0.000

Table A7. Field blank data collected during the study – continued

[μg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	NO ₃	3	Z	Na	PN	p	Ÿ		Ь		PO_4	4	Pb	c	Pr	ŗ
	mg N/L	//L	mg	mg/L	µg/L	T	l/gµ	1	µg/L	. 1	mg P/L	,\T	J/gµ	T	1/gµ	\mathbf{T}
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	∢	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.05	0.09	< 0.04	0.00	< 0.0009	0.0011	< 0.01	0.01	< 3	1	< 0.02	0.01	0.003	0.004	< 0.0001	0.0001
Churn Blank	< 0.05	0.07	0.05	0.05	0.0036		0.00	0.01	> 2	_	< 0.02	0.00	0.020	0.008	0.0011	0.0001
Filter Blank	< 0.05	0.02	< 0.04	0.02	< 0.0009	0.0003	0.08	0.01	< × 2	1	< 0.02	0.00	0.007	0.002	< 0.0001	0.0001
BLANKS SEPTEMBER 1999																
DI System	< 0.02	0.00	< 0.02	0.04	< 0.0006		0.004	0.003	< 13	7	< 0.02	0.00	< 0.004	0.000	< 0.0001	0.0002
Store-bought "DI" water	0.03	0.00	_	0.02	< 0.0006	0.0007	10	0	< 13	2	< 0.02	0.00	0.14	0.00	< 0.0001	0.0002
Churn Blank	0.07	0.01	1.0	0.2	0.0010		11	0	< 13	4	< 0.02	0.00	0.15	0.00	0.0002	0.0001
Filter (only) blank	< 0.02	na	0.07	90.0	< 0.0006	0.0005	0.015	900.0	< 13	∞	< 0.02	0.00	0.004	0.002	0.0002	0.0002
Process Blank	< 0.02	0.01	< 0.02	0.00	< 0.0006	0.0002	0.013	0.003	< 13	ε	< 0.02	0.00	0.008	0.004	0.0002	0.0002
BLANKS MAY 2000																
DI System	0.055	0.098	0.098 0.007		< 0.0007		< 0.4	0.5	> 2	2	< 0.006	0.004	0.006	0.002	< 0.0002	0.0000
Holding Bottle Blank	0.024	0.052	0.018	0.003	0.0044	0.0007	< 0.4	0.3	> 2	2	< 0.006	0.001	0.008	0.005	0.0009	0.0002
Churn Blank	< 0.007	0.010	0.017		0.0030		< 0.4	0.1	< × 2	_	< 0.006	0.000	0.015	0.007	0.0010	0.0002
Filter (only) blank	0.016	0.011	0.015		< 0.0007		< 0.4	0.3	7	\mathcal{S}	< 0.006		0.025	0.002	< 0.0002	0.0000
Process Blank	< 0.007	0.016	0.035		0.0015	0.0011	< 0.4	0.3	< 2	7	< 0.006	0.000	0.036	0.011	0.0002	0.0000

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Rb		Re		SO_4	Sb	þ	Se		SiO_2	Sm	u	Sr	
	µg/L	L	l/gμ	L	mg/L	l∕gµ	T /	µg/L		mg/L	J/gµ	$^{ m T}$	I/gµ	J
	Avg	SD	Avg	SD	Avg	Avg	SD	Avg SD		Avg SD	Avg	SD	Avg	SD
BLANKS JUNE 1999														
DI System	< 0.002	0.002		_	< 0.1	0.006	0.005			0.02 0.01	< 0.0007		< 0.06	0.03
Churn Blank	0.012	0.001	< 0.0002	_	0.1	0.008	0.007	< 0.3 0.23		< 0.02 0.03	< 0.0007	0.0006	0.33	0.04
Filter Blank	0.002	0.000	< 0.0002	0.0001	< 0.1	0.003	0.001				0.0007		0.07	0.03
BLANKS SEPTEMBER 1999														
DI System	< 0.0005	< 0.0005 0.0002		_	> 2	0.0028	0.0019		•	_	< 0.0007		< 0.01	0.02
Store-bought "DI" water	0.0008	0.0008 0.0001	< 0.0003	0.0001	> 2	0.0065	0.0001				< 0.0007	0.0000	0.11	0.02
Churn Blank	0.10	0.00	0.0011	_	5.3	0.023	0.001				< 0.0007		12	0
Filter (only) blank	0.000	0.0006	< 0.0003	0.0000	2.9	0.0035	0.0011	< 0.05 0.05		0.08 0.04	< 0.0007		< 0.01	0.01
Process Blank	0.0005	0.0004	< 0.0003	0.0001	< × 2	0.0012	0.0002				< 0.0007	0.0004	< 0.01	0.01
BLANKS MAY 2000														
DI System	< 0.001	0.001	< 0.0003		< 0.5	0.003	0.002		•		< 0.0009		< 0.06	0.03
Holding Bottle Blank	0.014	0.001	< 0.0003	0.0000	< 0.5	0.002	0.004	< 0.1 0	0.1 <	< 0.02 0.03	< 0.0009	0.0001	0.34	0.01
Churn Blank	0.013	0.001	< 0.0003	_	< 0.5	0.003	0.003		•		< 0.0009		0.27	0.01
Filter (only) blank	0.001	0.001	< 0.0003		< 0.5	0.008	0.007		•	0.02 0.01	< 0.0009		< 0.06	0.03
Process Blank	0.009	0.005	< 0.0003	0.0001	< 0.5	0.007	0.003		Ť	0.02 0.02	< 0.0009	0.0005	0.23	90.0

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Ta		$^{ m L}$		Te	e	Th	_	Ti		I		Tm	
	µg/L	Γ	ηg/L	ר	I/gµ	/L	ηgη	Ţ	1/gn	. 1	ηgη	Ţ	∏gµ	Γ
	Avg	SD	Avg	SD	Avg	SD	Avg	$^{\mathrm{SD}}$	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999														
DI System	< 0.001 0.001	0.001	< 0.0002	0.0000	< 0.01	0.002	0.0003	0.0004	0.2	0.1	< 0.002	0.001	< 0.0002	0.0000
Churn Blank	0.004	0.000	< 0.0002	0.0001	< 0.01	900.0	0.0016	0.0000	9.0	0.2	< 0.002	0.000	< 0.0002	0.0000
Filter Blank	< 0.001	0.001	< 0.0002	0.0001	< 0.01	0.003	0.0003	0.0001	< 0.1	0.1	0.002	0.001	< 0.0002	0.0001
BLANKS SEPTEMBER 1999														
DI System	< 0.001 0.001	0.001	< 0.0002	0.0001	< 0.01	0.003	< 0.0002	0.0004	< 0.06	0.02	< 0.0002	0.0003	< 0.0001	0.0001
Store-bought "DI" water	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.001	< 0.0002	0.0002	< 0.06	0.01	0.0017	0.0012	< 0.0001	0.0001
Churn Blank	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.002	0.0003	0.0002	< 0.06	0.04	0.0019	0.0000	< 0.0001	0.0000
Filter (only) blank	< 0.001	0.000	< 0.0002	0.0001	< 0.01	0.002	< 0.0002	0.0002	< 0.06	0.01	< 0.0002	0.0005	< 0.0001	0.0000
Process Blank	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.002	< 0.0002	0.0001	< 0.06	0.01	< 0.0002	0.0003	< 0.0001	0.0000
BLANKS MAY 2000														
DI System	< 0.005 0.004	0.004	< 0.0001	0.0001	< 0.01	0.005	< 0.0001	0.0001	< 0.1	0.1	0.0025	0.0031	< 0.0002	0.0000
Holding Bottle Blank	< 0.005	0.005	< 0.0001	0.0001	< 0.01	0.004	0.0002	0.0002	< 0.1	0.0	0.0023	0.0014	< 0.0002	0.0000
Churn Blank	900.0	0.011	0.0001	0.0001	< 0.01	0.011	< 0.0001	0.0000	< 0.1	0.0	0.0026	0.0042	< 0.0002	0.0001
Filter (only) blank	< 0.005 0.006	900.0	< 0.0001	0.0000	< 0.01	0.004	0.0006	0.0007	< 0.1	0.1	0.0019	0.0041	< 0.0002	0.0000
Process Blank	< 0.005 0.006	900.0	< 0.0001	0.0001	< 0.01	0.001	0.0001	0.0000	< 0.1	0.2	0.0032	0.0021	< 0.0002	0.0000

Table A7. Field blank data collected during the study – continued

[μg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	U		>		W		Y		Yb		Z	Zn	Zr		Alkalinity
	µg/L	Γ	$\mu g/L$. 1	I/gµ	Γ	I/gn	Γ	J/gn	Ţ	µg/L	,/L	J/gµ	ر	med/L
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Value
BLANKS JUNE 1999															
DI System	0.0012	0.0015	0.20	0.11	0.004	0.002	< 0.0003	0.0001	< 0.0005			0.03	< 0.001	0.001	na
Churn Blank	0.0010	0.0002	< 0.2	90.0	0.006	0.002	0.0016	0.0002	< 0.0005		1.92	0.00	0.004	0.002	na
Filter Blank	< 0.0007 0.0003	0.0003	< 0.2	0.03	< 0.002	0.001	0.0003	0.0002	< 0.0005		0.33	0.02	0.002	0.000	na
BLANKS SEPTEMBER 1999															
DI System	< 0.0005 0.0000	0.0000	< 0.1	0.02	< 0.001	0.001	< 0.0001	0.0001	< 0.0004		1.2	0.0	< 0.0008	0.0005	na
Store-bought "DI" water	< 0.0005	0.0000	< 0.1	0.02	< 0.001	0.000	< 0.0001	0.0001	< 0.0004		1.9	0.1	< 0.0008	0.0014	na
Churn Blank	< 0.0005	0.0003	< 0.1	0.03	0.004	0.001	0.0013	0.0000	< 0.0004	0.0002	2.3	0.1	< 0.0008	0.0003	na
Filter (only) blank	< 0.0005	0.0004	< 0.1	0.02	< 0.001	0.000	< 0.0001	0.0001	< 0.0004		0.87	0.07	0.0009	0.0006	na
Process Blank	< 0.0005	0.0001	< 0.1	0.04	< 0.001	0.000	< 0.0001	0.0000	< 0.0004		2.0	0.1	< 0.0008	0.0004	na
BLANKS MAY 2000															
DI System	< 0.005	0.001	< 0.05	0.05	< 0.002	0.001	< 0.0007	0.0001	< 0.0003		0.15	0.02	< 0.001	0.001	0.0443
Holding Bottle Blank	< 0.005	0.001	< 0.05	0.07	0.003	0.000	0.0020	0.0001	< 0.0003	0.0003	0.13	0.0	< 0.001	0.001	0.0503
Churn Blank	< 0.005	0.001	< 0.05	0.03	0.002	0.001	0.0022	0.0004	< 0.0003		0.17	0.15	< 0.001	0.001	0.0515
Filter (only) blank	< 0.005	0.004	0.10	0.12	0.003	0.001	< 0.0007	0.0003	< 0.0003		0.18	0.10	< 0.001	0.001	0.0627
Process Blank	< 0.005	0.001	< 0.05	0.08	0.003	0.001	0.0014	0.0006	< 0.0003	0.0001	0.90	0.61	0.002	0.003	0.0496

Table A8. Concentrations of nutrients and dissolved organic carbon (DOC) in grab samples collected on the synoptic trip of April 20, 1999.

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; Avg, average, SD, standard deviation]

Site	Site Location ¹	Time Dist. ¹ Q NO ₃	Dist. ¹	0	Š)3	NO_2	\mathcal{O}_2	NH_4	I4	P(PO_4	F		DG	DOC
Name ¹			km	cms	cms mg N/L	N/L	mg N/L	NL	mg N/L	N/L	mg P/L	P/L	mg/L	./r	mg C/L	2
					Avg	SD	Avg SD Avg SD	SD	Avg SD		Avg SD	SD	Avg SD	SD	Avg SD	SD
	IROQUOIS RIVER	R														
IR01	IR01 Highway 55 gage, Ind. 14:50	14:50	0.0	36	10.8	0.01	0.049	0.000	0.0 36 10.8 0.01 0.049 0.000 0.073 0.000 0.11 0.01 0.037 0.003 5.9 0.1	0.000	0.11	0.01	0.037	0.003	5.9	0.1
IR03	IR03 Brook, Ind.	14:30	5.9	*8	10.9	0.29	0.049	0.000	$5.9\ \ 48^{*}\ \ 10.9\ \ 0.29\ \ 0.049\ \ 0.000\ \ 0.054\ \ 0.001\ \ 0.06\ \ 0.01\ \ 0.045\ \ 0.002$	0.001	0.06	0.01	0.045	0.002	6.0 0.1	0.1
IR05	IR05 100 W bridge, Ind.	14:10		51*	11.9	0.10	0.050	0.000	$12.0 51^{*} 11.9 0.10 0.050 0.000 0.066 0.005 0.08 0.01 0.049 0.002 5.9 0.1$	0.005	0.08	0.01	0.049	0.002	5.9	0.1
F00E	Newton Co.															
IKU/	Fairgrounds, Ind.	13:55		62*	12.1	0.01	0.052	0.000	$21.1 62^* 12.1 0.01 0.052 0.000 0.068 0.002 0.09 0.01 0.055 0.005 6.0 0.1$	0.002	0.09	0.01	0.055	0.005	0.9	0.1
$\mathbb{R}08$	IR08 Iroquois, III.	13:00	33.1	75	13.1	0.17	0.051	0.000	$33.1 \ \ 75 13.1 \ \ 0.17 \ \ 0.051 0.000 0.083 0.003 0.09 0.01 0.067 0.003 5.7 0.1$	0.003	0.09	0.01	0.067	0.003	5.7	0.1
	SUGAR CREEK															
SC03	SC03 Highway 71, Ind.	16:25	8.6	na	12.8	0.10	0.022	0.000	16:25 9.8 na 12:8 0.10 0.022 0.000 0.032 0.005 0.06 0.00 0.034 0.004 2.4 0.2	0.002	90.0	0.00	0.034	0.004	2.4	0.2
SC08	SC08 2440 E Rd., III.	17:00	29.9	na	13.4	0.04	0.019	0.000	29.9 na 13.4 0.04 0.019 0.000 0.025 0.001 0.05 0.00 0.031 0.004 2.2 0.1	0.001	0.05	0.00	0.031	0.004	2.2	0.1

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A9. Concentrations of major ions in grab samples collected on the synoptic trip of April 20, 1999.

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter; Avg, average, SD, standard deviation]

\mathbb{D}^1	Site ¹	Time Dist. ¹ Q CI	Dist. ¹	0		SO_4	CO ₃ + .	+ HCO ₃ Br Na K Mg Ca	E	3r	Na		K		Mg		Ca		SiO_2	
			km	cms	٦	mg/L	mg C/L	\mathbb{C}^{1}	ãп	ζ/L	/gm	Ţ	mg/	ļ	mg/L		mg/L		mg/L	
					ē	Value	Avg	SD	Avg	SD	Avg	SD	Avg	SD ,	Avg Sl	D A	Sgv	D A	80	Ü
	IROQUOIS RIVER	~																		
IR01	IR01 Highway 55 gage, Ind. 14:50	14:50	0.0	36	23	54	41.5	0.1	6.5	0.2	9.9	0.2	2.6	0.1	22	1	74	1 ,	0 6.	4.
IR03	IR03 Brook, Ind.	14:30	5.9 48*	*8	24	52	40.4	0.1	9.9	8.0	6.4	0.1	2.7	0.1	22	,	2 1 71 2 8.1 (2 8	3.1	0.3
IR05	100 W bridge, Ind.	14:10		51*	25	49	39.5	0.1	6.2	6.2 0.4	6.4 0.0 2.7 0.0	0.0	2.7	0.0	22 (,	70	1 8	8.1 0	7.
IR07	Fairgrounds, Ind.	13:55	13:55 21.1 62*	62*	23	46		0.1	6.0		6.2	0.3	2.8	0.2		0	29	4 8	.1	9.
IR08	IR08 Iroquois, III.	13:00	33.1	75	23	42	36.2	0.1	0.9	0.1	6.1	0.0	3.0 0.0	0.0	21 (0	66 1	1 8	8.2 C	0.2
	SUGAR CREEK																			
SC03	SC03 Highway 71, Ind.	16:25	16:25 9.8 na	na	19		40 40.6	0.2 5.3 0.5 4.7 0.3 1.3 0.1	5.3	0.5	4.7	0.3	1.3	0.1	24 1 67 1 7.7 0.5	1	<i>L</i> 9	1 7) <i>L</i> '.	5.
SOUS	SCO8 2440 F Rd 111	17.00	99.9	na	10			0	٨	1	4 6	0.0	2	0 1	25	_	63	,	5	4

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999.

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

\mathbb{ID}^1	Site ¹	Time Dist.	Dist. ¹	O	Al		As		В		\mathbf{Ba}		Be		Bi		Cd	
			km	cms	µg/L	,	µg/L	. 1	µg/L	ے	µg/L		$\mu g/L$. 1	µg/L	Г	µg/L	Γ
					Avg SD	SD	Avg	SD	Avg SD		Avg SD	Q	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	~																
IR01	Highway 55 gage, Ind.	14:50	0.0	0.0 36	4	0	0.58	0.02	31	4	46	> 0	< 0.007	0.004	0.004	0.004	0.005	0.002
IR03	IR03 Brook, Ind.	14:30	5.9	5.9 48*	53	_	0.62	0.01	33	4	46	1	0.014	0.005	0.013	0.009	0.012	0.001
IR05	IR05 100 W bridge, Ind.	14:10	12.0 51*	51*	S	0	0.59	0.02	33	4	45		< 0.007	0.002	0.007	0.001	0.012	0.003
IR07	Newton Co. Fairgrounds, Ind.	13:55	13:55 21.1 62*	62*	28	-	0.58	0.02	29	2	43		< 0.007	0.007	0.024	0.017	0.012	0.003
IR08	IR08 Iroquois, III.	13:00	13:00 33.1 75	75	24	_	0.61	0.03	32	4	42	2	0.011	0.007	0.006	9000	0.024	0.000
	SUGAR CREEK																	
SC03	SC03 Highway 71, Ind.	16:25	9.8 na	na	13	1	0.42	0.02	27	3	39	> 0	< 0.007	0.005	0.005	0.003	0.008	0.004
SC08	SC08 2440 E Rd., III.	17:00	17:00 29.9 na	na	∞	_	0.42	0.01	27	7	34	~	< 0.007	0.004	0.004	0.003	0.007	0.001

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

\mathbb{D}^1	Site ¹	Time Dist.	Dist. ¹	\circ	Ce		Co		Cr		Cs		Cu		Dy	
			km	cms	$\mu g/L$	Γ	hg/L	Γ	µg/L	Ţ	hg/L	ر	µg/L	. 1	hg/L	Ţ
					Avg	SD	Avg	SD	Avg SD	SD	Avg	SD	Avg SD	SD	Avg	SD
	IROQUOIS RIVER	~														
IR01	IR01 Highway 55 gage, Ind.	14:50	0.0	36	0.018	0.001	0.020	0.028	< 0.2 0.1	0.1	0.002	0.001	1.2 0.0	0.0	0.0057	0.0009
IR03	IR03 Brook, Ind.	14:30	5.9	*8	0.080	0.002	0.047	0.019	< 0.2	0.0	0.004	0.001	1.2	0.0	0.011	0.001
IR05	IR05 100 W bridge, Ind.	14:10	12.0	51*	0.024	0.002	0.024	0.016	< 0.2	0.1	0.003	0.001	1.2	0.0	0.0064	0.0005
IR07	Newton Co. Fairgrounds, Ind.	13:55	13:55 21.1	62^*	0.045	0.004	0.048	0.001	< 0.2	0.1	0.003	0.001	1.3 0.0		0.0081	0.0003
IR08	IR08 Iroquois, III.	13:00 33.1	33.1	75	0.044	0.001	0.016	0.017	0.017 < 0.2 0.1	0.1	0.005	0.001	1.4 0.0		0.0091	0.0017
	SUGAR CREEK															
SC03	SC03 Highway 71, Ind.	16:25	8.6	na	0.034	0.003	< 0.002	0.019	< 0.2 0.1	0.1	< 0.002	0.001	0.8 0.0	0.0	0.0051	0.0004
SC08	SC08 2440 E Rd., III.	17:00	17:00 29.9	na	0.021	0.001	< 0.002	0.007	< 0.2	0.1	0.009	0.000	6.0	0.1	0.0040	0.0003

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

${ m ID}^1$	Site ¹	Time	Time Dist. ¹	ŏ	Д	Er	Eu	1	Fe		PS	p	Hg	50	Ho	0	La	a
			km	cms	в́п	ng/L	mg/L	Γ	µg/L	ر	µg/L	T.	ng/L	T	µg/L	T.	в́п	µg/L
					Avg	SD	Avg	SD	Avg SD	SD	Avg	SD	Avg SD	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	8																
IR01	IR01 Highway 55 gage, Ind.	14:50	0.0	36	0.0 36 0.0057 0.0007	0.0007	< 0.0002 0.0017	0.0017	4	3	0.0052	0.0007	1.8	0.1	4 3 0.0052 0.0007 1.8 0.1 0.0012	0.0002 0.014	0.014	0.001
IR03	IR03 Brook, Ind.	14:30	5.9	*84	5.9 48* 0.0077	0.0004	0.0013	0.0012	63	4	63 4 0.0101	0.0003	1.3	1.3 0.2	0.0023	0.0002	0.043	0.002
IR05	IR05 100 W bridge, Ind.	14:10	12.0	51*	12.0 51* 0.0066	0.0001	0.0014	0.0017	S	7	0.0055	0.0006	1.8	1.8 0.2	0.0014	0.0002	0.018	0.001
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	[*]	21.1 62* 0.0067 0.0000	0.0000	0.0018	0.0018 0.0019		8	0.0072	25 5 0.0072 0.0014	2.2	0.1	2.2 0.1 0.0019	0.0001	0.028	0.000
IR08	IR08 Iroquois, III.	13:00	33.1	75	13:00 33.1 75 0.0061	0.0006	0.0017	0.0010		α	0.0063	0.0005	2.2	2.2 0.2	0.0020	0.0001	0.029	0.000
	SUGAR CREEK																	
SC03	SC03 Highway 71, Ind.	16:25	8.6	na	9.8 na 0.0037 0.0009	0.0009	0.0009	0.0009 0.0015	9	4	0.0051	0.0008	3.2	0.0	6 4 0.0051 0.0008 3.2 0.0 0.0010	0.0001 0.021	0.021	0.001
SC08	SC08 2440 E Rd., III.	17:00	29.9	na	17:00 29.9 na 0.0023	0.0006	0.0006	0.0006 0.0010		4	0.0043	0.0005	1.4	0.3	< 2 4 0.0043 0.0005 1.4 0.3 0.0009	0.0000	0.018	0.002

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

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	Site	Time Dist.	Dist.	\supset	コ	_	Lu	ņ	Mn	r.	Mo		N	_	Z	1	P	C
			km	cms	$\mu g/L$	T	$^{\rm hg/L}$./L	$\mu g/L$	Ţ	$\mu g/L$		$\mu g/L$	J	µg/L	T	µg/L	T
					Avg	Avg SD	Avg	SD	Avg	SD	Avg SD Avg SD Avg SD	, U	4vg	SD		SD	Avg SD Avg	SD
	IROQUOIS RIVER	~																
IR01	IR01 Highway 55 gage, Ind.	14:50	0.0	36	36 2.1 0.1	0.1	0.0017	0.0002 11.9 1.7 3.0 0.0 0.020	11.9	1.7	3.0 0	0 0.	.020	0.000 0.30 0.07	0.30	0.07	0.16	0.16
IR03	IR03 Brook, Ind.	14:30	5.9	*84	2.2	0.0	0.0016	0.0002	10.8 1.8	1.8	2.9 0.1 0.052	0.1		0.002	1.17	0.13	0.050	0.001
IR05	IR05 100 W bridge, Ind.	14:10	12.0	51*	2.0	0.0	0.0015	0.0001	8.6 1.3	1.3	2.7 0	0.0 0.0	0.025	0.001	89.0	0.46	0.028	9000
IR07	Newton Co. Fairgrounds, Ind.	13:55 21.1	21.1	[*]	62* 1.9 0.1	0.1	0.0019 0.0001	0.0001	7.0	1.3	7.0 1.3 2.6 0.0 0.035 0.001 1.18 0.07	0.0	.035	0.001	1.18	0.07	0.035 0.004	0.004
IR08	IR08 Iroquois, III.	13:00 33.1	33.1	75	1.8	0.0	75 1.8 0.0 0.0016 0.0000	0.0000	0.9	1.0	6.0 1.0 2.4 0.0 0.036	0 0.	.036	0.001 0.67	0.67	0.55 (0.041	0.001
	SUGAR CREEK																	
SC03	SC03 Highway 71, Ind.	16:25	16:25 9.8	na	2.2	0.2	2.2 0.2 0.0006 0.0001	0.0001	6.6	1.6	9.9 1.6 2.3 0.0 0.025 0.002 0.29 0.46	0 0.	.025	0.002	0.29	0.46	0.043 0.009	0.009
SC08	SC08 2440 E.Rd., III.	17:00	17:00 29.9	na	2.5	0.2	0.2 0.0005 0.0002		7.3	1.3	7.3 1.3 2.3 0.1 0.021 0.002 0.31 0.42	0.1	.021	0.002	0.31	0.42	0.032	0.019

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

\mathbb{D}^1	Site ¹	Time Dist.	Dist. ¹	o	P	Pr	R	Rb	Re	e	Sb	b	Se	4)	Sm	n	Sr	
			km	cms	µg/L	'V	$\mu g/L$	\ T	gh	µg/L	$\mu g/L$./r	$\mu g/L$	$^{ m T}$	µg/L	T	$\mu g/L$	T
					Avg	SD	Avg SD	SD	Avg	SD	Avg SD	SD	Avg SD	SD	Avg	SD	Avg SD	SD
	IROQUOIS RIVER	~																
IR01	Highway 55 gage, Ind.	14:50	0.0	36	36 0.0041	0.0002 0.65 0.01	0.65	0.01	0.0137	0.0004 0.12 0.01 0.7 0.1	0.12	0.01	0.7		0.0051	0.0007 179	179	2
IR03	IR03 Brook, Ind.	14:30	5.9	*84	0.0123	0.0006	0.70	0.01	0.0127	0.0007	0.13	0.03	0.8 0.1	0.1	0.010	0.000	173	7
IR05	IR05 100 W bridge, Ind.	14:10	12.0	51*	0.0055	0.0005	0.61	0.01	0.0128	0.0003	0.12	0.01	0.8 0.1		0.0040	0.0007	166	7
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	*29	62* 0.0078	0.0004	0.65	0.02	0.02 0.0121 0.0001	0.0001	0.13	0.02	0.7	0.1	0.02 0.7 0.1 0.0057 0.0001 160	0.0001	160	2
IR08	IR08 Iroquois, III.	13:00	33.1	75	0.0082	0.0003	0.62	0.02	0.0121	0.0005	0.12	0.01	0.01 0.9 0.2	0.2	0.0070	0.0007 149	149	1
	SUGAR CREEK																	
SC03	SC03 Highway 71, Ind.	16:25	9.8 na	na	0.0055	0.0004	0.36	0.00	0.0055 0.0004 0.36 0.00 0.0103 0.0004 0.10 0.01 1.0 0.2 0.0050 0.0005 112	0.0004	0.10	0.01	1.0	0.2	0.0050	0.0005	112	1
SC08	SC08 2440 E Rd., III.	17:00	17:00 29.9	na	0.0042	0.0002	0.28		0.01 0.0102 0.0003 0.14	0.0003	0.14	0.04	6.0	0.2	0.04 0.9 0.2 0.0038 0.0007	0.0007	104	1

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

\mathbb{D}^1	Site ¹	Time	Time Dist. ¹	0	Та	~	I	Tb	Te		Th		Τi		II		Tm
			km	cms	µg/L	Ţ	в́п	µg/L	$\mu g/L$		µg/L		$\mu g/L$		µg/L	n.	µg/L
					Avg SD	SD	Avg	SD	Avg SD		Avg SD		vg Sl	D Av	Avg SD Avg SD	Avg	SD
	IROQUOIS RIVER	8															
IR01	Highway 55 gage, Ind.	14:50	0.0	36	< 0.01	0.01	0.0007	0.0001	0.0 36 <0.01 0.01 0.0007 0.0001 <0.02 0.00 0.0020 0.0001 0.1 0.1 0.010 0.000 0.0001 0.00	00.00	00.00	01 0.	.1 0.	1 0.01	0.000	0.0012	0.0001
IR03	IR03 Brook, Ind.	14:30	5.9	*8	$5.9 48^* < 0.01 0.01$	0.01		0.0018 0.0001	$<0.02 \ 0.00 \ 0.0074 \ 0.0012 \ 1.6 \ 0.0 \ 0.008 \ 0.000 \ 0.0012$	00.00	74 0.00	12 1.	.6 0.	0.00	0.000	0.0012	0.0003
IR05	100 W bridge, Ind.	14:10		51*	$12.0 51^* < 0.01 0.01$	0.01	0.0007	0.0001	< 0.02 0.0	0.01 0.0029		01 0.	.2 0.	0.0001 0.2 0.0 0.011	1 0.002	0.0010	0.0001
IR07	Newton Co. Fairgrounds, Ind.	13.55	21.1	62*	< 0.01	0.01	0.0013	00000	13:55 211 62* < 0.01 0.01 0.0013 0.0000 < 0.02 0.0064 0.0016 1.0 0.0 0.011 0.0012 0.0001	000 20	000	16 1		0 0 0	1 0 001	0.0012	0.0001
IR08	IR08 Iroquois, III.	13:00	33.1	75	< 0.01	0.01	0.0008	0.0001	13:00 33.1 75 < 0.01 0.01 0.0008 0.0001 < 0.02 0.01 0.0050 0.0004 0.7 0.1 0.011 0.002 0.0011 0.0001	0.00	50 0.00	0.0 0.0	7 0.	1 0.01	1 0.002	0.0011	0.0001
	SUGAR CREEK																
SC03	SC03 Highway 71, Ind.	16:25		na	< 0.01	0.01	0.0007	0.0002	9.8 na <0.01 0.01 0.007 0.0007 0.0002 <0.02 0.01 0.0031 0.0013 0.4 0.1 0.011 0.002 0.0005 0.0001	0.00	131 0.00	13 0.	.4 0.	1 0.01	1 0.002	0.0005	0.0001
SC08	SC08 2440 E Rd III.	17:00	29.9	na	< 0.01	0.01	0.0006	0.0000	17:00 29:9 na < 0.01 0.01 0.0006 0.0000 < 0.02 0.01 0.0026 0.0010 0.2 0.1 0.010 0.002 0.0004 0.0001	0.00	000 97	10 0.	2 0.	1 0.01	0.002	0.0004	0.0001

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

${ m ID}^1$	Site ¹	Time	Time Dist. ¹	\circ	n		>	×	1			Y	Yb	Zn		Zr	
			km	cms	$\mu g/L$		µg/L	µg/L	\T	вц	µg/L	āп	µg/L	$\mu g/L$	٦	µg/L	Г
					Avg SD	D A	Avg SD	Avg SD	SD	Avg	SD	Avg	SD	Avg	SD	Avg SD Avg	SD
	IROQUOIS RIVER	~															
IR01	IR01 Highway 55 gage, Ind.	14:50	0.0	36	1.7 0.	0.1 <(< 0.2 0.1		< 0.08 0.01	0.040	0.000	6900.0 000.0	0.0005 0.6 0.1	9.0		0.115 0.002	0.002
IR03	IR03 Brook, Ind.	14:30	5.9	*8	1.6 0.1		0.3 0.1	< 0.08	0.05	0.063	0.001	0.0093	0.0002	0.8	0.1	0.154	0.008
IR05	IR05 100 W bridge, Ind.	14:10	12.0	51*	1.6 0.0		0.2 0.1	< 0.08	0.04	0.044	0.002	0.0083	0.0004	0.6	0.1	0.122	0.004
IR07	Newton Co. Fairgrounds, Ind.	13:55	13:55 21.1	*65	62* 1.5 0.1	1 0	0.3 0.1	< 0.08 0.00	0.00	0.049	0.001	0.049 0.001 0.0079	0.0003	0.8 0.1	0.1	0.154	0.003
IR08	IR08 Iroquois, III.	13:00	13:00 33.1	75	75 1.4 0.0	0 0	0.5 0.3	< 0.08	0.01	0.048	0.001	0.001 0.0087	0.0003	2.4 0.1	0.1	0.148	0.010
	SUGAR CREEK																
SC03	SC03 Highway 71, Ind.	16:25	8.6	na	1.6 0.0	0.0	0.3 0.0 < 0.08 0.00 0.037	< 0.08	0.00	0.037	0.000	0.000 0.0027	0.0003 0.3 0.0	0.3	0.0	0.045 0.002	0.002
SC08	SC08 2440 E Rd., III.	17:00	17:00 29.9	na	1.4 0.0		< 0.2 0.0	< 0.08	0.01	< 0.08 0.01 0.031	0.001	0.001 0.0024	0.0002	0.4	0.3	0.036	900.0

* These values are estimates

 $^{^{\}rm I}$ More complete explanations of these are found in tables 1 and 2

Table A11. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

											Kjeldahl						Suspended
Site	Site	Dist. ¹	Date	Time Q	0	NO_3	Z	NO_2	NH_4	\mathbf{I}_4	Z	PO_4	4	Ь		DOC	Sediment
Name	Location Location	km		J	cms 1	mg N/L	mg	mg N/L	mg N/L	Z/L	mg N/L	mg P/L	7/c	mg/L	ر	mg C/L	mg/L
					A	Avg SD	Avg	SD	Avg	SD	Value	Avg	SD	Avg	SD	Avg SD	Value
	IROQUOIS RIVER	/ER															
IR01	Highway 55 gage, Ind.	0.0	0.0 06/25/99 13:15		6.7 4.6	50 0.04	0.048	0.001	0.032	900.0	0.54	_	0.003		0.003		70
IR02	Highway 16 bridge, Ind.	2.0	2.0 06/25/99 16:00		6.8 4.5	_	0.049	0.001	0.027	0.007	0.55	_	0.014		0.003		53
IR03	Brook, Ind.	5.9	5.9 06/25/99 21:20	21:20	7.8 4.5	54 0.15	0.049	0.001	0.038	0.006	0.58	0.026	0.004	0.041	0.002	6.4 0.5	na
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99 03:15	03:15	8.1 4.9	_	0.055	0.001	0.036	0.001	0.54	_	0.002		0.003		56
IR05	CR 100W bridge, Ind.	12.0	06/26/99 09:00	00:60	7.2 5.6	_	0.063	0.001	0.036	0.002	0.56	_	0.010		0.001		99
IR06	Highway 41 bridge, Ind.	16.5	06/26/99 12:40	12:40	7.1 5.0	_	0.054	0.002	0.030	0.005	0.55	_	900.0		0.001		09
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99 17:30	17:30	5.7 4.8	33 0.11	0.049	0.002	0.030	0.005	0.54	_	0.017		0.002	5.8 0.2	52
	SUGAR CREEK	3.1															
SC01	CR 400W bridge, Ind.	0.0	06/27/90	17:00	2.7 62.0	32 0.16	0.039	0.001	0.011	900.0	0.27	< 0.02	0.00	< 0.002	0.001	2.3 0.1	na
SC02	CR 600W bridge, Ind.	4.5	4.5 06/22/99 23:10 0.37 7.68	23:10 (37 7.0	58 0.11	0.048	0.001	0.014	0.003	0.30	< 0.02		< 0.002	0.003	2.2 0.0	17
SC03	Highway 71 bridge, Ind.	8.6	06/23/99	07:00 (.517.	74 0.04	0.042	0.000	< 0.002	900.0	0.27	< 0.02		_	0.002		23
SC04	· Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23 8.0	54 0.31	0.035	0.001	0.009	0.000	0.28	< 0.02		_	0.000		18
SC05	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27 8.2	29 0.05	0.032	0.001	< 0.003	0.002	0.30	< 0.02	0.00	_	0.002	1.9 0.1	∞
SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	.52 8.	75 0.10	0.030	0.001	< 0.003	0.002	0.27	< 0.02		_	0.001		13
SC07		26.9	06/24/99	02:45	1.57 8.0	50 0.01	0.029	0.001	< 0.003	0.002	0.29	< 0.02		< 0.002	0.001		20
SC08	; CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91 8.8	31 0.09	0.031	0.001	0.010	0.002	0.26	< 0.02		< 0.002	0.001		31
SC09	Milford, III.	34.4	06/24/99	10:15 2	2.09 8.		0.029	0.000	0.027	0.003	0.28	< 0.02		0.012	0.001		4
SC10	Above Mud Cr. #3, III.	37.8	37.8 06/24/99 14:10 2.22 8.	14:10 2	2.22 8.2		0.029	0.001	0.025	0.004	0.29	< 0.02	0.00	0.011	0.002		99
	SUGAR CREEK TRIBUTARIES	UTAR	IES														
SCT1	SCT1 Mud Cr. #1, Ind.	11.7	06/23/99	06:30	.64 9.9	$\overline{}$	0.031	0.002	0.010	0.003	0.29	< 0.02	0.00		0.001		48
SCT2	SCT2 Mud Cr. #2, III.	21.2	21.2 06/23/99 18:45 0.49 11.7	18:45 (.49 11	.7 0.4	0.047	0.000	< 0.003	0.008	0.28	< 0.02	0.01	< 0.002	0.001	1.9 0.0	5
SCT3	SCT3 Unnamed trib., III.	28.5	06/24/99	01:20).1612		0.066	0.002	0.016	0.001	0.36	< 0.02	0.00		0.003		24

¹ More complete explanations of these are found in table 1.

Table A12. Concentrations of major ions in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; na, not available]

Site	Site	Dist. ¹	Date	Time	0	CI	Š	SO_4 H	HCO ₃ + CC		Br	Na	а	X		Mg		Ca	01	SiO_2
Name ¹	Location ¹	km			cms		<	L	mg C/L	<			٥	mg/L	٥	mg/L	< _		<	~
					4	Avg SD	Avg	JC.	Avg SD	O Avg	JC 5	Avg	JC	Avg	JC	Avg o	SD A	Avg SD	J Avg	S SD
	IROQUOIS RIVER	VER																		
IR01	Highway 55 gage, Ind.	0.0	0.0 06/25/99 13:15	13:15	6.7 2.	25.7 1.0	59.6	1.0	46.6 0.	2 10	_	10	0	2.2	0.0	23	1 7	9	9.9	
IR02	Highway 16 bridge, Ind.	2.0	2.0 06/25/99	16:00	6.8 2.	25.3 0.9	57.8	0.4	46.2 0.	1 12		8.6	0.2	2.2	0.1					
IR03	Brook, Ind.	5.9	5.9 06/25/99	21:20				0.7				11	0	2.3	0.0		0	0 6		
IR04	Meridian Rd. bridge, Ind.	9.4	9.4 06/26/99	03:15	8.1 2	24.9 0.9	55.3	0.4	45.6 0.0	0 16	2	8.6	0.1	2.2	0.1					
IR05	CR 100W bridge, Ind.	12.0	12.0 06/26/99	00:60	7.2 24			0.1				8.3	0.1	2.3	0.0	21	9 0	0 8		
IR06	Highway 41 bridge, Ind.	16.5	06/56/99	12:40		1.7 1.2		9.0	45.2 0.5			8.5	0.3	2.0	0.0	22	1 6) 69	7.0	0.2
IR07	Newton Co. Fairgrounds, Ind.	21.1	21.1 06/26/99	17:30	5.7 25.	5.2 1.3	55.9	0.0	45.8 0.1	1 18	ω	8.9	0.3	2.1	0.1	23	1 7	3 1	7.(
	SUGAR CREEK	$\Xi \mathbf{K}$																		
SC01	CR 400W bridge, Ind.	0.0	0.0 06/22/99 17:00		0.29	7.8 ni	a 53.1	na ,	17.1 0.	4 10	33	6.5	0.1		.02	28	1 7) 8	.9	0.1
SC02	CR 600W bridge, Ind.	4.5	4.5 06/22/99 23:10	23:10	0.37 18	18.6 na	a 55.4	na ,	48.6 0.	2 11	0	7.4	_	0.97	0.01	28	0 7	75 1	5.2	0.1
SC03	Highway 71 bridge, Ind.	8.6	9.8 06/23/99 07:00 0.51	07:00	0.51 17.	7.5 na	a 59.5	na ,	49.2 0.	1 11	4	6.5	_		.01	27	0 7	7	4.	
SC04	Stateline Rd. bridge, IllInd.	14.0	14.0 06/23/99	12:00	1.23 19	19.3 na	a 62.4	na ,		7 8	7	6.7			0.0	56	0 7	9	5.5	
SC05	CR 3000E bridge, III.	17.7	17.7 06/23/99	16:30	1.27 19	19.0 na	a 63.5	na ,	43.9 0.3			6.7	0.5	1:1	0.0	28	0 7	3	4.	
SC06	CR 2800E bridge, III.	21.4	21.4 06/23/99	20:10	1.52 18	18.9 na	a 62.5	na	na na	a 10	co	6.1	0.1	1.0	0.0	56	1 7	2	4. %.	
SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57 18	18.6 na	a 60.8	na ,	44.3 0.3			5.9	0.1) 66.	.02	28	0	0	ω,	
SC08	CR 2440E bridge, III.	30.1	30.1 06/24/99	06:25	1.91	18.5 na	a 58.7	na ,	44.9 0.0	0 16	4	6.2	0.2	1.1	0.0	56	1 7	0	4.	
SC09	Milford, III.	34.4	34.4 06/24/99 10:15		2.09 18	18.5 na	a 56.1	na ,	44.4 0.0		7	9.9	0.1	1.1	0.0	28	1 6) 6	4.	3 0.2
SC10	Above Mud Cr. #3, III.	37.8	37.8 06/24/99	14:10	2.22 18	.8.8 na	a 56.5	na ,	14.3 0.	0 21	7	9.9	0.2	1.1	0.1	24	1 6	4	4.	3 0.1
	SUGAR CREEK TRIBUTARIES	3UTAR	(ES																	
SCT1	SCT1 Mud Cr. #1, Ind.	11.7	11.7 06/23/99 09:30 0.64	06:30	3.64 18	8.9 na	ı 59.9	na ,	46.7 0.1			6.4	0.1	1.0	0.0	28	1 7			
SCT2	SCT2 Mud Cr. #2, III.	21.2	21.2 06/23/99 18:45 0.49	18:45 (19.8 na	a 46.6	na ,	41.8 0.1	1 11	7	6.3	0.1	0.91	0.01	31	9 0	0 99		0.1
SCT3	SCT3 Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	21.6 2.0	44.9	0.3	46.1 0.2			7.2	0.0	1.1	0.0	31	1 6) 6	6.3	0.1

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site	Site	Dist. ¹	Date	Time	O	Al		As	s	В		Ba		Be		Bi	
Name ¹	Location ¹	km			cms	1/gµ	Ţ	1/gµ	Ţ	µg/L	. 1	$\mu g/L$		√gµ	J	T/gµ	<u>ں</u>
						Avg	SD	Avg	SD	Avg	D	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	IVER															
IR01 Highwa	Highway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	2.49	0.11	1.11	90.0	69	1	61.9	1.2	< 0.02	0.00	0.0016	0.0002
IR02 Highwa	Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9	2.80	0.10	1.09	0.03	99	0	60.5	1.1	< 0.02	0.02	0.0023	0.0006
IR03 Brook, Ind.	Ind.	5.9	06/22/90	21:20	7.8	1.90	0.17	1.14	0.05	61	1	59.5	0.9	< 0.02	0.00	0.0006	0.0001
IR04 Meridia	Meridian Rd. bridge, Ind.	9.4	06/52/90	03:15	8.1	2.10	0.32	1.15	0.04	27	∞	58.6	1.8	< 0.02	0.02	0.0014	0.0002
IR05 CR 100'	CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	2.30	0.00	1.10	0.09	49	-	57.0	1.7	< 0.02	0.03	0.0010	0.0001
IR06 Highwa	Highway 41 bridge, Ind.	16.5	06/52/90	12:40	7.1	2.21	0.05	1.05	0.03	51	7	56.8	1.2	< 0.01	0.01	0.0015	0.0003
IR07 Newton Ind.	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	1.80	0.05	1.11	0.08	53	-	59.0	0.5	< 0.01	0.01	0.0005	0.0002
	SUGAR CREEK	EEK															
SC01 CR 400'	CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	2.62	0.01	0.65	0.03	52	1	51.8	0.8	< 0.02	0.00	0.0052	0.0022
SC02 CR 600'	CR 600W bridge, Ind.	4.5	4.5 06/22/99	23:10	0.37	1.00	0.25	0.54	0.03	52	-	52.3	0.7	< 0.02	0.01	0.0021	0.0002
SC03 Highwa	Highway 71 bridge, Ind.	8.6	06/23/99	07:00	0.51	2.21	0.11	0.50	0.03	47	0	50.5	1.5	0.03	0.03	0.0019	0.0004
SC04 Stateline	Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	2.27	0.03	0.54	0.07	43	_	50.8	0.9	< 0.02	0.01	0.0024	0.0009
SC05 CR 3000	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	1.60	0.24	0.50	0.04	44	2	47.9	0.9	< 0.02	0.01	0.0013	0.0004
SC06 CR 2800	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	1.96	0.09	0.51	0.04	45	_	46.4	1.1	< 0.02	0.02	0.0010	0.0002
SC07 CR 900]	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	1.23	0.03	0.48	0.01	44	0	43.0	0.1	< 0.01	0.00	0.0011	0.0009
SC08 CR 2440	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	1.30	0.04	0.53	0.04	48	_	42.8	6.0	< 0.01	0.00	0.0014	0.0004
SC09 Milford, Ill	, III.	34.4	06/24/99	10:15	2.09	2.09	0.05	0.56	0.04	47	7	41.4	0.7	< 0.01	0.01	0.0033	0.0025
SC10 Above I	Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	1.57	0.13	0.61	0.03	44	2	40.7	9.0	0.02	0.01	0.0040	0.0004
S	SUGAR CREEK TRIBUTARIES	IBUTA	RIES														
SCT1 Mud Cr. #1, Ind.	: #1, Ind.	11.7	06/23/99	06:30	0.64	2.26	0.19	0.49	0.07	34	1	49.2	1.1	< 0.02	0.01	0.0014	0.0005
SCT2 Mud Cr. #2, III.	: #2, 111.	21.2	06/23/99	18:45	0.49	1.61	0.21	0.51	0.03	61	_	30.4	0.7	< 0.02	0.01	0.0020	0.0010
SCT3 Unnamed trib., III.	ed trib., III.	28.5	06/24/99	01:20	0.16	1.45	90.0	0.79	0.05	63	1	34.4	0.8	< 0.02	0.01	0.0012	0.0001

¹ More complete explanations of these are found in table 1.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than] Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

Site	Site	Dist. ¹	Date	Time	O	СД	-	Ce		ပ္ပ		Cr		Cs	
Name	Location L	km			cms	l/gµ	Ţ	µg/L	ر	hg/L		$\mu g/L$	Ţ	T/gµ	,
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	VER													
IR01	Highway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	0.015	0.003	0.0197	0.0005	0.099	0.008	< 0.4	0.1	< 0.002	0.0014
IR02	Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9	0.020	0.002	0.0171	0.0013	0.114	0.023	< 0.4	0.1	0.0074	0.0028
IR03	Brook, Ind.	5.9	06/22/99	21:20	7.8	0.014	0.001	0.0191	0.0007	0.127	0.012	< 0.4	0.1	0.0022	0.0016
IR04	Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	0.019	0.007	0.0170	0.0010	0.122	0.032	< 0.4	0.4	0.0044	0.0003
IR05	CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	0.012	0.001	0.0148	0.0004	0.126	0.000	< 0.4	0.2	< 0.002	0.0015
IR06	Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	0.000	0.002	0.0187	0.0004	0.143	0.009	< 0.4	0.1	< 0.003	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	900.0	0.002	0.0205	0.0008	0.145	0.011	< 0.4	0.0	< 0.003	0.001
	SUGAR CREEK	EK													
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.024	0.001	0.0380	0.0014	0.046	0.015	< 0.4	0.1	0.0082	0.0003
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.016	0.003	0.0233	0.0003	0.054	0.011	< 0.4	0.1	0.0024	0.0007
SC03	Highway 71 bridge, Ind.	8.6	06/23/99	00:00	0.51	0.038	0.003	0.0287	0.0010	0.005	0.022	< 0.4	0.3	0.0053	0.0032
SC04	Stateline Rd. bridge, IllInd.	14.0	06/23/99	12:00	1.23	0.024	0.009	0.0206	0.0008	0.025	0.016	< 0.4	0.2	0.0024	0.0006
SC05	CR 3000E bridge, III.	17.7	06/23/90	16:30	1.27	0.015	0.003	0.0107	0.0004	0.036	0.014	< 0.4	0.2	< 0.002	0.0011
SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	0.017	0.004	0.0114	0.0003	0.046	0.001	< 0.4	0.1	0.0023	0.0011
SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	0.005	0.002	0.0116	0.0010	0.020	0.010	< 0.4	0.1	< 0.003	0.001
SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	0.007	0.006	0.0150	0.0006	0.026	0.003	< 0.4	0.1	< 0.003	0.001
SC09	Milford, III.	34.4	06/24/99	10:15	2.09	< 0.002	0.000	0.0126	0.0002	0.060	0.006	< 0.4	0.1	< 0.003	0.001
SC10	Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	0.005	0.001	0.0136	0.0004	0.038	0.004	< 0.4	0.2	< 0.003	0.001
	SUGAR CREEK TRIBUTARIES	BUTA	RIES												
SCT1	SCT1 Mud Cr. #1, Ind.	11.7	06/23/90	06:30	0.64	0.013	0.001	0.0221	0.0004	< 0.004	0.024	< 0.4	0.3	0.0019	0.0004
SCT2	SCT2 Mud Cr. #2, III.	21.2	06/23/99	18:45	0.49	0.018	0.003	0.0156	0.0008	0.254	0.013	< 0.4	0.2	0.0051	0.0012
SCT3	SCT3 Unnamed trib., III.	28.5	06/24/99	01:20	0.16	0.015	0.003	0.0120	0.0007	0.029	0.012	< 0.4	0.2	0.0019	0.0005

¹ More complete explanations of these are found in table 1.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than] Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

0.0008 0.0010 0.0013 0.0016 0.0001 0.0005 0.0002 0.0004 0.0010 0.0005 0.0012 0.0008 0.0004 0.0024 0.0011 0.0004 0.0010 0.0007 0.0002 0.0031 SD $\mu g/\Gamma$ En < 0.0004 < 0.0004 < 0.0004 < 0.0004 < 0.0004 < 0.0004 0.0010 0.0017 0.0008 0.0020 0.0000 0.0005 0.0010 0.0017 0.0014 0.0014 0.0025 0.0009 0.0008 0.0019 Avg0.0003 0.0006 0.0005 0.0002 0.0003 0.0001 0.0004 0.0002 0.0000 0.0003 0.0007 0.0002 0.0002 0.0004 0.0002 0.0001 0.0001 0.0003 0.0000 0.0005 SDµg/L Ē 0.0043 0.0043 0.0047 0.0038 0.0038 0.0042 0.0032 0.0030 0.0028 0.0025 0.0019 0.0019 0.0029 0.0024 0.0030 0.0047 0.0030 0.0027 0.0025 0.0039 Avg 0.0000 0.0005 0.0006 0.0013 0.0007 0.0007 0.0004 0.0004 0.0004 0.0002 0.0004 0.0012 0.0008 0.0006 0.0004 0.0000 0.0006 0.0004 0.0006 0.0001 SD $\mu g/L$ D 0.0036 0.0049 0.0042 0.0046 0.0056 0.0048 0.0032 0.0038 0.0054 0.0042 0.0045 0.0042 0.0037 0.0044 0.0047 0.0026 0.0034 0.0041 0.0031 0.0031 Avg 0.08 0.03 0.05 0.02 0.02 0.12 0.02 0.03 0.02 0.04 0.04 0.04 0.01 0.01 0.01 0.01 SD $\mu g/L$ \mathbb{C}^{n} 0.50 0.63 0.86 0.94 0.98 0.85 0.86 0.44 0.53 0.45 0.55 0.58 Avg0.94 4.0 0.54 0.51 0.60 0.57 0.51 2.09 0.64 0.49 0.16 2.22 0.37 0.51 1.23 1.57 8.1 1.27 1.52 1.91 cms 0 00:70 12:00 02:45 10:15 09:30 18:45 01:20 13:15 16:00 21:20 33:15 00:60 12:40 17:30 23:10 16:30 20:10 36:25 14:10 Time 06/23/99 06/22/90 06/22/99 06/22/90 06/56/99 06/56/99 06/52/90 06/56/99 06/22/90 06/22/90 06/23/99 06/23/99 06/23/99 06/23/99 06/24/99 06/24/99 06/24/99 06/24/99 06/23/99 06/24/99 Date SUGAR CREEK TRIBUTARIES 0.0 5.9 9.4 12.0 14.0 21.4 26.9 30.1 34.4 37.8 21.2 28.5 16.5 21.1 17.7 Dist. IROQUOIS RIVER km SUGAR CREEK Stateline Rd. bridge, III.-Ind. Newton Co. Fairgrounds, Meridian Rd. bridge, Ind. Highway 41 bridge, Ind. Highway 71 bridge, Ind. Highway 16 bridge, Ind. Highway 55 gage, Ind. CR 100W bridge, Ind. Above Mud Cr. #3, III. CR 400W bridge, Ind. CR 600W bridge, Ind. CR 3000E bridge, III. CR 2800E bridge, III. CR 900N bridge, III. CR 2440E bridge, III Location 1 SCT3 Unnamed trib., III. Site SCT1 Mud Cr. #1, Ind. SCT2 Mud Cr. #2, III. SC09 Milford, III. Brook, Ind. SC03 SC07 SC08 Name 1 SC02 SC04 SC05 SC06 SC01 Site IR01 IR06 IR02 IR03 IR04 IR05 IR07

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

cms μg/L μg/L <th< th=""><th>Site</th><th>Site</th><th>Dist.¹</th><th>Date</th><th>Time</th><th>O</th><th>Fe</th><th>0)</th><th>PS</th><th>р</th><th>Hg</th><th></th><th>Но</th><th>I</th><th>La</th><th>I</th><th>Li</th></th<>	Site	Site	Dist. ¹	Date	Time	O	Fe	0)	PS	р	Hg		Но	I	La	I	Li
ROQUOIS RIVER 13.11 1.0 0.0047 0.0003 0.01 0.0000 0.0134 1.1 0.0047 0.0003 0.01 0.0000 0.0134 1.1 0.0047 0.0003 0.01 0.0000 0.0134 1.1 0.0045/99 1.2 0.0 0.052/99 1.2 0.0 0.0047 0.0007 0.0014 0.0001 0.0000 0.0114 0.0058 0.0	Name ¹	Location ¹	km			cms	μg	Ţ	рц	T	ng/L	Δ.	g/L	š'n	3/T	µg/L	T
Highway 55 gage, Ind. 0.0 06/25/99 13:15 6.7 11 0 0.0047 0.0003 6.0.3 0.1 0.0010 0.0003 4.0.17 Brook, Ind. 0.0 06/25/99 13:15 6.7 11 0 0.0047 0.0003 6.0.3 0.1 0.0010 0.0003 0.0113 Brook, Ind. 0.0 06/25/99 13:15 6.7 11 0 0.0047 0.0007 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0							Avg	SD	Avg	SD			SD	Avg		Avg	SD
Highway 55 gage, Ind. 10. 06/25/99 13:15 6.7 11 0 0.0047 0.0003 <0.0 10 0.0010 0.0000 0.0134 Highway 16 bridge, Ind. 20. 06/25/99 16:00 6.8 9.2 0.1 0.0053 0.0014 <0.3 0.1 0.0011 0.0003 0.0117 Brook, Ind. 10. 06/25/99 16:00 6.8 9.2 0.1 0.0053 0.0014 <0.3 0.1 0.0011 0.0003 0.0117 Rook, Ind. 21. 06/26/99 03:15 8.1 8.4 0.3 0.0051 0.0007 <0.3 0.0 0.0010 0.0001 0.0128 Highway 41 bridge, Ind. 12. 06/26/99 17:30 7.1 6.8 0.2 0.0047 0.0007 <0.3 0.0 0.0010 0.0010 0.0123 Highway 41 bridge, Ind. 12. 06/26/99 17:30 7.1 6.8 0.2 0.0047 0.0007 <0.3 0.0 0.0010 0.0012 Highway 41 bridge, Ind. 12. 06/26/99 17:30 7.1 6.8 0.2 0.0047 0.0007 <0.3 0.0 0.0010 0.0012 Highway 41 bridge, Ind. 12. 06/26/99 17:30 7.1 6.8 0.2 0.0047 0.0007 <0.3 0.0 0.0010 0.0012 CR 600W bridge, Ind. 21. 06/26/99 17:30 7.1 6.8 0.2 0.0067 0.0007 <0.3 0.0 0.0010 0.0014 CR 600W bridge, Ind. 22. 06/22/99 17:30 0.2 1.1 0.0073 0.0007 0.001 0.0014 CR 800W bridge, Ind. 23. 06/22/99 12:00 1.2 1.2 0.0014 0.0007 0.001 0.0010 0.0019 CR 300G bridge, III. 21. 06/23/99 12:00 1.2 1.2 1.2 0.0014 0.0009 0.4 0.1 0.0010 0.0019 CR 300G bridge, III. 22. 06/24/99 0.2:4 1.5 1.2 1.2 0.0014 0.0006 0.0006 0.0007 0.0001 0.0019 CR 240G bridge, III. 24. 06/24/99 0.2:4 1.5 1.2 2.0 0.001 0.0004 0.0006 0.0007 0.0001 0.0019 CR 240G bridge, III. 32. 06/24/99 0.2:4 1.5 1.2 2.0 0.003 0.0006 0.0006 0.0007 0.0001 0.0019 Above Mud Cr. #3. III. 24. 06/24/99 0.2:4 1.5 1.0 0.0004 0.0008 0.0001 0.0001 0.0019 CR 240G bridge, III. 25. 06/24/99 0.0006 0.0006 0.0008 0.0001 0.0000 0.0001 0.0019 Above Mud Cr. #3. III. 26. 06/24/99 0.0006 0.0006 0.0008 0.0001 0.0001 0.0019 Above Mud Cr. #3. III. 27. 06/24/99 0.000 0.0009 0.0008 0.0001 0.0000 0.0001 0.0019 CR 240G bridge, III. 28. 06/24/99 0.000 0.0009 0.0009 0.0008 0.0001 0.0001 0.0019 CR 240G bridge, III. 29. 06/24/99 0.000 0.0009 0.0009 0.0009 0.0000 0.0000 0.0001 0.0019 CR 240G bridge, III. 20. 06/24/99 0.000 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0		IROQUOIS RI	[VER														
Highway I 6 bridge, Ind. St. 06/25/99 16:00 6.8 9.2 0.1 0.0053 0.0014 <0.3 0.1 0.0011 0.0003 0.0112 Brook, Ind. St. 06/25/99 21:20 7.8 11 0 0.0047 0.0007 <0.3 0.0 0.0013 0.0001 0.0125 Meridian Rd. bridge, Ind. St. 06/25/99 0:315 8.1 8.4 0.3 0.0051 0.0002 <0.3 0.0 0.0010 0.0001 0.0121 CR 100W bridge, Ind. I.2. 06/26/99 0:00 7.2 5.9 0.0 0.0041 0.0007 <0.3 0.0 0.0010 0.0012 0.0103 Highway 41 bridge, Ind. St. 06/25/99 17:30 7.1 6.8 0.2 0.0041 0.0007 <0.3 0.0 0.0011 0.0002 0.0124 Ind. St. 06/25/99 17:30 7.1 6.8 0.2 0.0047 0.0003 <0.3 0.0 0.0012 0.0001 0.0144 Ind. St. 06/25/99 17:30 0.2 1.1 06/26/99 17:30 0.2 1.1 0.2 0.0066 0.0005 <0.3 0.0 0.0012 0.0001 0.0144 Ind. St. 06/25/99 17:00 0.2 1.1 0.0004 0.0005 0.0 0.000 0.0 0.0 0.0004 0.0005 CR 600W bridge, Ind. St. 06/25/99 17:00 0.2 1.1 0.0004 0.0006 0.0005 0.1 0.0010 0.0010 0.0195 Highway 71 bridge, Ind. St. 06/25/99 17:00 0.2 1.1 0.0004 0.0006 0.0005 0.1 0.0010 0.0001 0.0195 CR 800W bridge, Ind. St. 06/23/99 12:00 0.2 1.2 1.2 0.0004 0.0006 0.000 0.1 0.0001 0.0002 0.0005 CR 800W bridge, III. St. 06/23/99 0.2 12:00 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2		lighway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	11	0	0.0047	0.0003		0.0010	0.0000	0.0134	0.0005	3.86	0.05
Brook, Ind. 5.9 0625/99 21:20 7.8 11 0 0.0047 0.007 <0.0 0.001 0.001 0.01		lighway 16 bridge, Ind.	2.0		16:00	8.9	9.2	0.1	0.0053	0.0014	_		0.0003	0.0117	0.0006	3.95	0.22
CR 100W bridge, Ind. 9.4 06/26/99 09:05 03:15 8.1 8.4 03 0.0051 0.0002 0.0010 0.0001 0.0010 0.		srook, Ind.	5.9		21:20	7.8	11	0	0.0047	0.0007				0.0126	0.0002	3.93	0.02
CR 100W bridge, Ind. 12.0 0626/99 09:00 7.2 5.9 0.0 0.0041 0.0007 <0.0 0.0010 0.0002 0.0103 Highway 41 bridge, Ind. 16.5 0626/99 12:40 7.1 6.8 0.2 0.0047 0.0003 <0.0		1 deridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	8.4	0.3	0.0051	0.0002				0.0121	0.0001	3.74	0.21
Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. SUGAR CREEK SAMPLOR Bridge, III. SUGAR CREEK SU		R 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	5.9	0.0	0.0041	0.0007				0.0103	0.0005	3.53	0.16
Newton Co. Fairgrounds, 21.1 06/26/99 17:30 5.7 7.1 0.2 0.0065 0.0006 <0.3 0.0 0.0012 0.0001 0.0144 SUGAR CREEK CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 21 0 0.0069 0.0005 <0.3 0.1 0.0010 0.0001 0.025 CR 400W bridge, Ind. 4.5 06/22/99 17:00 0.21 15 0 0.0060 0.0005 <0.3 0.1 0.0010 0.0001 0.0055 CR 500W bridge, Ind. 14.0 06/23/99 12:00 1.23 5.5 0.2 0.0051 0.0006 <0.3 0.1 0.0010 0.0001 0.0155 CR 200W bridge, III. 17.7 06/23/99 12:00 1.23 5.5 0.2 0.0051 0.0006 <0.3 0.1 0.0010 0.0001 0.0159 CR 200W bridge, III. 21.4 06/23/99 12:00 1.25 1.2 0.0051 0.0006 <0.3 0.1 0.0001 0.0001 0.0059 CR 200W bridge, III. 21.4 06/23/99 16:30 1.27 4.6 0.2 0.0051 0.0006 <0.3 0.1 0.0007 0.0001 0.0059 CR 2440E bridge, III. 26.9 06/24/99 02:45 1.57 3.0 0.1 0.0049 0.0006 <0.3 0.1 0.0009 0.0001 0.0119 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.1 0.0009 0.0001 0.0119 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 11:0 0.016 2.3 0.1 0.0008 0.0001 0.0109 Unnamed trib. III. 28.5 06/24/99 01:20 01:0 0.0039 0.0005 0.0001 0.0001 0.0105 CR 24/09 01:0 0.0001 0		lighway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	8.9	0.2	0.0047	0.0003	_			0.0125	0.0003	3.76	0.26
SUGAR CREEK SUGAR CREEK CR 400W bridge, Ind. 0.0622/99 17:00 0.29 21 0 0.0009 2.7 0.4 0.0013 0.0001 0.0057 CR 400W bridge, Ind. 4.5 06/22/99 17:00 0.29 21 0 0.0069 2.7 0.4 0.001 0.0051 Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 10 0.0064 0.0009 0.4 0.1 0.0010 0.0052 Stateline Rd. bridge, III. 14.0 06/23/99 12:00 1.23 5.5 0.2 0.0054 0.0006 0.0 0.		Vewton Co. Fairgrounds, nd.	21.1	06/56/99	17:30	5.7	7.1	0.2	0.0065	900000				0.0144	0.0006	3.77	0.22
CR 400W bridge, Ind. 4.5 06/22/99 17:00 0.29 21 0 0.0073 0.0009 2.7 0.4 0.0013 0.0001 0.0262 CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 15 0 0.0064 0.0005 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		SUGAR CRE	EK														
CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 15 00060 0.0066 0.0005 <0.3 0.1 0.0010 0.0090 Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 10 0.0064 0.0009 0.4 0.1 0.0013 0.0002 Stateline Rd. bridge, III. 14.0 06/23/99 12:00 1.23 5.5 0.2 0.0051 0.0006 <0.3 0.1		R 400W bridge, Ind.	0.0		17:00	0.29	21	0	0.0073	0.0000	2.7 0.4		0.0001	0.0262	0.0010	4.48	0.21
Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 10 0.054 0.0004 0.04 0.0009 0.4 0.1 0.0013 0.0000 0.0202 Stateline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 5.5 0.2 0.0051 0.0006 <0.3 0.1 0.0010 0.0001 0.0159 CR 3000E bridge, III. 7.7 06/23/99 12:00 1.27 4.6 0.2 0.0035 0.0006 <0.3 0.1 0.0005 0.0001 0.0089 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 3.8 0.1 0.0040 0.0006 <0.3 0.1 0.0007 0.0002 CR 240E bridge, III. 26.9 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0002 <0.3 0.1 0.0008 0.0001 Milford, III. 34.4 06/24/99 10:15 2.09 2.6 0.1 0.0048 0.0008 <0.3 0.1 0.0009 0.0011 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.1 0.0009 0.0001 Mud Cr. #1, Ind. 11.7 06/23/99 18:45 0.49 6.10 0.0049 0.0006 <0.3 0.1 0.0008 0.0011 Other colors of the colors of	SC02 C	R 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	15	0	0900.0	0.0005	_			0.0195	0.0009	4.54	0.05
Statelline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 5.5 0.2 0.0056 <0.3 0.1 0.0010 0.0010 0.0159 CR 3000E bridge, III. 17.7 06/23/99 16:30 1.27 4.6 0.2 0.0035 0.0006 <0.3 0.1 0.0005 0.0009 0.0011 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0005 <0.3		lighway 71 bridge, Ind.	8.6	06/23/99	07:00	0.51	10	0	0.0064	0.0000	_	0.0013		0.0202	0.0000	4.20	0.39
CR 2800E bridge, III. 21.4 06/23/99 16:30 1.27 4.6 0.2 0.0035 0.0006 <0.3 0.1 0.0005 0.0001 0.0009 0.0095 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 3.8 0.1 0.0040 0.0006 <0.3 0.2 0.0007 0.0002 0.0095 0.0095 CR 2400E bridge, III. 30.1 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0005 <0.3 0.1 0.0009 0.0001 0.0095 0.0119 Milford, III. 34.4 06/24/99 10:15 2.09 2.6 0.1 0.0049 0.0008 <0.3 0.1 0.0009 0.0001 0.0119 0.0119 0.0008 Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.2 0.0010 0.0011 0.0121 0.0121 0.023/99 18:45 0.49 4.6 0.1 0.0040 0.0005 <0.3 0.1 0.0008 0.0001 0.0119 0.0119 0.0119 0.0111 0.023/99 18:45 0.49 4.6 0.1 0.0049 0.0005 <0.3 0.1 0.0008 0.0001 0.0119 0.0105 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0119 0.0109 0.0109 0.0119 0.0109		tateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	5.5	0.2	0.0051	0.0006	_			0.0159	0.0008	3.49	0.28
CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 3.8 0.1 0.0040 0.0006 <0.3 0.2 0.0007 0.0002 0.0095 CR 2400E bridge, III. 26.9 06/24/99 02:45 1.57 3.0 0.1 0.0036 0.0002 <0.3 0.1 0.0008 0.0001 0.0095 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0005 <0.3 0.1 0.0007 0.0001 0.0119 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.1 0.0009 0.0001 0.0121		JR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	4.6	0.2	0.0035	0.0006	_			0.0089	0.0001	3.61	0.03
CR 900N bridge, III. 30.1 06/24/99 02:45 1.57 3.0 0.1 0.0036 0.0002 <0.3 0.1 0.0008 0.0001 0.0092 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0005 <0.3 0.2 0.0007 0.0001 0.0119 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.2 0.0010 0.0001 0.0117		JR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	3.8	0.1	0.0040	0.0006	_		0.0002	0.0095	0.0004	3.89	0.19
CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 2.6 0.0 0.0045 0.0005 <0.3 0.2 0.0007 0.0001 0.0119 Milford, III. 34.4 06/24/99 10:15 2.09 2.6 0.1 0.0049 0.0008 <0.3 0.1 0.0009 0.0002 0.0117 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3 0.2 0.0010 0.0001 0.0121 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 3.4 0.0 0.0061 0.0011 <0.3 0.2 0.0013 0.0003 0.0173 Mud Cr. #2, III. 21.2 06/23/99 01:20 0.16 2.3 0.1 0.0039 0.0005 <0.3 0.1 0.0008 0.0001 0.0105 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 2.3 0.1 0.0039 0.0006 <0.3 0.1 0.0008 0.0001 0.0105	SC07 C	JR 900N bridge, III.	26.9	06/24/99	02:45	1.57	3.0	0.1	0.0036	0.0002	_			0.0092	0.0006	3.60	0.12
Milford, III. 34.4 06/24/99 10:15 2.09 2.6 0.1 0.0049 0.0008 <0.3 0.1 0.0009 <0.0017 0.0010 0.0011 Above Mud Cr. #1, Ind. 11.7 06/24/99 14:10 2.22 2.3 0.2 0.0038 0.0008 <0.3		JR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	2.6	0.0	0.0045	0.0005	_		0.0001	0.0119	0.0006	3.73	0.10
Above Mud Cr. #3, III. 37.8 o/24/99 o/24/99 o/230 14:10 o/222 o/2.3 2.22 o/2.3 0.2 o/0038 o/0008 o/0.0008 o/0.3 0.0008 o/0.3 0.0001 o/0010 o/0001 o/0001 0.00121 o/0012 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 o/23/99 o/0.30 0.64 o/0.4 o/0.00 o/0.001 0.0001 o/0.001 0.0001 o/0.003 0.0003 o/0.003 0.0173 Mud Cr. #2, III. 21.2 o/2/23/99 o/0.20 o/0.120 o/0.16 o/0.16 o/0.10 o/0.003 0.1000 o/0.000 o/0.10 o/0.003 0.1000 o/0.000 o/0.10 o/0.003 0.0000 o/0.000 o/0.000 o/0.10 o/0.003 0.0000 o/0.000 o/0.10 o/0.003 0.0000 o/0.000 o/0.10 o/0.003 0.0000 o/0.10 o/0.000 o/0.10 o/0.000		Ailford, III.	34.4	06/24/99	10:15	2.09	2.6	0.1	0.0049	0.0008	_			0.0117	0.0003	3.59	0.16
REEK TRIBUTARIES 11.7 06/23/99 09:30 0.64 3.4 0.0 0.0061 0.0011 <0.3 0.2 0.0013 0.0003 0.0173 21.2 06/23/99 18:45 0.49 4.6 0.1 0.0040 0.0005 <0.3 0.1 0.0008 0.0002 0.0119 28.5 06/24/99 01:20 0.16 2.3 0.1 0.0039 0.0006 <0.3 0.1 0.0008 0.0001 0.0105	SC10 A	sbove Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	2.3	0.2	0.0038	0.0008		_	0.0001	0.0121	0.0005	3.66	0.23
11.7 06/23/99 09:30 0.64 3.4 0.0 0.0061 0.0011 <0.3 0.2 0.0013 0.0003 0.0173 21.2 06/23/99 18:45 0.49 4.6 0.1 0.0040 0.0005 <0.3 0.1 0.0008 0.0002 0.0119 28.5 06/24/99 01:20 0.16 2.3 0.1 0.0039 0.0006 <0.3 0.1 0.0008 0.0001 0.0105		SUGAR CREEK TRI	BUTA	RIES													
21.2 06/23/99 18:45 0.49 4.6 0.1 0.0040 0.0005 <0.3 0.1 0.0008 0.0002 0.0119 28.5 06/24/99 01:20 0.16 2.3 0.1 0.0039 0.0006 <0.3 0.1 0.0008 0.0001 0.0105	SCT1 N	Aud Cr. #1, Ind.	11.7	06/23/99	06:30	0.64	3.4	0.0	0.0061	0.0011	_			0.0173	0.0012	2.82	0.38
28.5 06/24/99 01:20 0.16 2.3 0.1 0.0039 0.0006 <0.3 0.1 0.0008 0.0001 0.0105	SCT2 N	Aud Cr. #2, III.	21.2	06/23/99	18:45	0.49	4.6	0.1	0.0040	0.0005					0.0007	4.18	0.36
	SCT3 L	Jnnamed trib., III.	28.5	06/24/99	01:20	0.16	2.3	0.1	0.0039	0.0006	<0.3 0.1	0.0008	0.0001	0.0105	0.0002	4.88	0.20

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

0.008 0.004 0.003 0.006 0.014 0.002 0.002 0.007 0.089 0.007 0.000 0.001 0.002 0.004 0.004 0.002 0.001 SDµg/L Pb 0.019 0.016 0.010 0.034 0.029 0.014 0.140 0.059 0.034 0.012 Avg0.117 0.017 0.052 0.027 0.024 0.043 0.031 0.38 0.59 0.14 0.29 0.06 1.02 0.17 0.05 0.17 0.23 0.63 0.28 0.24 0.72 0.01 0.51 0.57 SD $\mu g/L$ ź 0.86 0.90 0.25 0.36 Avg1.15 0.56 0.57 0.42 .38 .25 0.31 0.37 0.91 44. 0.41 0.0006 0.0022 0.0004 0.0008 0.0017 0.0004 0.0012 0.0020 0.0009 0.0003 0.0004 0.0008 0.0039 0.0006 0.0012 0.0027 0.0000 SD $\mu g/L$ PZ 0.0156 0.0140 0.0139 0.0213 0.0110 0.0174 0.0184 0.0170 0.0152 0.0165 0.0161 0.0314 0.0234 0.0107 Avg 0.0151 0.0147 0.0121 0.12 0.12 0.04 0.05 0.32 0.11 0.01 0.07 0.03 0.03 0.08 0.08 0.07 0.08 SD0.01 0.07 $\mu g/L$ M_0 Avg4.84 4.90 4.95 4.26 4.58 4.43 4.14 4.14 3.97 4.82 4.75 4.13 4.51 4.31 4.21 0.3 1.9 0.23 0.15 0.4 0.2 0.4 0.2 SD $\mu g/L$ Mn Avg 20.2 20.8 27.2 13.3 24.8 22.5 3.6 6.2 4.85 6.82 14.1 0.0000 0.0002 0.0000 0.0003 0.0004 0.0001 0.0001 0.0001 0.0000 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 SDµg/L Γ 0.0015 0.0010 0.0015 0.0014 0.0014 0.0013 0.0012 0.0006 0.0006 0.0005 0.0003 0.0007 0.0004 0.0002 0.0002 0.0004 0.0003 Avg 7.8 0.37 1.57 2.09 8.1 7.2 7.1 0.29 0.51 1.23 1.27 1.52 1.91 2.22 cms 0 12:40 23:10 00:00 16:30 02:45 06:25 10:15 13:15 16:00 21:20 03:15 00:60 17:30 12:00 20:10 14:10 Time 06/22/90 06/22/99 06/22/90 06/52/90 06/52/90 06/52/90 06/56/99 06/22/90 06/27/90 06/23/99 06/23/90 06/23/90 06/23/90 06/24/99 06/24/99 06/24/99 06/24/99 Date SUGAR CREEK TRIBUTARIES 0.0 37.8 5.9 12.0 14.0 26.9 34.4 16.5 30.1 17.7 IROQUOIS RIVER Dist.¹ km SUGAR CREEK Stateline Rd. bridge, III.-Ind. Newton Co. Fairgrounds, Meridian Rd. bridge, Ind Highway 41 bridge, Ind. Highway 71 bridge, Ind. Highway 16 bridge, Ind. Highway 55 gage, Ind. CR 100W bridge, Ind. CR 400W bridge, Ind. Above Mud Cr. #3, III. CR 600W bridge, Ind. CR 3000E bridge, III. CR 2800E bridge, III. CR 2440E bridge, III. CR 900N bridge, III. Location¹ Brook, Ind. SC09 Milford, Ill. [nd. Name¹ SC03 SC05 SC06 SC07 SC08 SC02 SC04 SC01 IR04 IR06 IR02 IR03 IR05 IR01 IR07

¹ More complete explanations of these are found in table 1.

0.005

0.022

0.52

<0.01

0.0001

0.0204

0.11

3.67

0.4

0.0001

0.0005

0.64

09:30 18:45 01:20

06/23/99

0.003

0.039

0.43

0.0006

0.0155

0.04

3.26

0.02

4.29

0.0001

0.49 0.0005

06/23/99

21.2 28.5

06/24/99

SCT3 Unnamed trib., III.

SCT1 Mud Cr. #1, Ind. SCT2 Mud Cr. #2, III. 0.37

0.43

0.0013

0.0141

0.02

3.58

98.6

0.0000

0.0003

0.16

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site	e	Site	Dist. ¹	Date	Time	o	Pr	l "	Rb	P P	N N	Re	S	Sb	Se		Sm	l u
Name	ne ¹	Location ¹	km			cms	1/gu	/L	hg/L	T	ηgη	7/s	µg/L	/L	µg/L	J	µg/L	Ţ
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
		IROQUOIS RIVER	IVER															
IR01		Highway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	0.0034	0.0003	0.953	0.015	0.0145	0.0008	0.146	0.008	< 0.3	0.25	0.0040	0.0004
IR02		Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9	0.0032	0.0001	0.960	0.028	0.0135	0.0006	0.151	0.007	0.46	0.23	0.0040	0.0010
IR03	3 Brook, Ind.	Ind.	5.9	06/22/99	21:20	7.8	0.0036	0.0002	0.908	0.008	0.0153	0.0017	0.147	0.004	< 0.3	0.04	0.0043	0.0000
IR04		Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	0.0033	0.0003	0.904	0.029	0.0134	0.0002	0.154	0.008	< 0.3	0.05	0.0030	0.0003
IR05		CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	0.0030	0.0002	0.977	0.013	0.0132	0.0004	0.149	0.007	0.46	0.07	0.0031	0.0010
IR06		Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	0.0034	0.0001	0.86	0.03	0.0135	0.0003	0.144	0.002	0.37	0.07	0.0037	0.0008
IR07		Newton Co. Fairgrounds, Ind.	21.1	06/56/99	17:30	5.7	0.0036	0.0003	0.82	0.01	0.0141	0.0004	0.148	0.003	0.39	0.05	0.0041	0.0006
10		SUGAR CREEK	EK															
SC01		CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	0.0066	0.0001	0.510	0.003	0.0106	0.0003	0.100	0.009	0.50	0.16	0.0055	0.0003
SC02		CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.0049	0.0000	0.572	0.001	0.0126	0.0002	0.116	0.005	0.65	0.15	0.0036	0.0011
SC03		Highway 71 bridge, Ind.	8.6	06/23/99	07:00	0.51	0.0053	0.0004	0.535	0.011	0.0144	0.0002	0.108	0.004	89.0	0.13	0900.0	0.0006
SC04		Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	0.0042	0.0002	0.482	0.001	0.0137	0.0013	0.175	0.003	0.40	0.21	0.0056	0.0002
SC05		CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	0.0025	0.0002	0.521	0.009	0.0129	0.0008	0.120	0.005	0.40	0.31	0.0016	0.0009
SC06		CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	0.0028	0.0000	0.512	900.0	0.0141	0.0002	0.134	0.005	0.46	0.29	0.0039	0.0013
SC07		CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	0.0026	0.0003	0.46	0.02	0.0126	0.0007	0.117	0.003	0.61	0.11	0.0029	0.0008
SC08		CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	0.0031	0.0002	0.47	0.02	0.0121	0.0005	0.112	0.004	0.57	0.03	0.0036	0.0004
SC09	99 Milford, III	1, 111.	34.4	06/24/99	10:15	2.09	0.0033	0.0004	0.49	0.01	0.01111	0.0003	0.132	0.002	0.52	80.0	0.0039	0.0004
SC10		Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	0.0029	0.0002	0.52	0.01	0.0114	0.0005	0.160	0.003	0.53	80.0	0.0041	0.0004
	S	SUGAR CREEK TRIBUTARIES	BUTA	RIES														
SCI	SCT1 Mud Cr. #1, Ind.	r. #1, Ind.	11.7	06/23/90	06:30	0.64	0.0048	0.0003	0.428	0.007	0.0139	0.0003	0.108	0.005	0.54	0.13	0.0047	0.0007
SCI	SCT2 Mud Cr. #2, III.	r. #2, III.	21.2	06/23/99	18:45	0.49	0.0035	0.0002	0.438	0.003	0.0088	0.0006	0.092	0.005	0.57	80.0	0.0033	0.0009
SCI	F3 Unnam	SCT3 Unnamed trib., III.	28.5	06/24/99	01:20	0.16	0.0029	0.0000	0.487	0.007	0.0081	0.0004	0.082	0.004	0.37	0.23	0.0037	0.0013

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Name ¹ Location ¹ km IROQUOIS RIVER		(H)	Time	У	Z		Гa		q.I.		Te	4)		Th	T	
Highway 55 g	km			cms	µg/L		$\mu g/L$		µg/L	رے	µg/L	Ţ	в́п	µg/L	$\mu g/L$	J
Highway 55 g					Avg S	SD	Avg S	SD A	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	RIVER															
	0.0	06/22/90	13:15	6.7	255	2	0.001 0.001		0.0006	0.0001	< 0.01	0.004	0.0009	0.0000	< 0.1	0.1
	2.0	06/22/99	16:00	8.9	255	2	0.001 0.0	0.000 0.0	0.0007	0.0001	0.013	0.006	0.0008	0.0002	< 0.1	0.1
IR03 Brook, Ind.	5.9	06/22/99	21:20	7.8	261	1	0.001 0.0	0.000 0.0	0.0004	0.0000	0.019	0.012	0.0011	0.0004	< 0.1	0.1
IR04 Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	246	· 0	< 0.001 0.001		0.0006	0.0002	< 0.01	0.001	0.0009	0.0004	< 0.1	0.0
IR05 CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	224	1 ^	< 0.001 0.001		0.0005	0.0001	< 0.01	0.001	0.0016	0.0000	< 0.07	0.08
IR06 Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	226	4	< 0.004 0.0	0.002 0.0	0.0005	0.0001	< 0.009	0.001	0.0011	0.0003	0.08	0.07
IR07 Newton Co. Fairgrounds, Ind.	21.1	06/56/99	17:30	5.7	236	× ∞	< 0.004 0.001		0.0007	0.0001	0.012	0.008	0.0012	0.0008	< 0.07	0.03
SUGAR CREEK	REEK															
SC01 CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	194	5	0.001 0.001		0.0010	0.0001	< 0.01	900.0	0.0009	0.0002	0.1	0.1
SC02 CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	179	2	0.001 0.0	0.000 0.0	0.0009	0.0001	< 0.01	0.001	0.0006	0.0002	< 0.1	0.0
SC03 Highway 71 bridge, Ind.	8.6	06/23/99	00:00	0.51	170	_	0.002 0.001		0.0009	0.0002	0.018	0.001	0.0004	0.0001	< 0.1	0.1
SC04 Stateline Rd. bridge, IllInd.	nd. 14.0	06/23/99	12:00	1.23	154	3 ^	< 0.001 0.001		0.0007	0.0002	< 0.01	0.002	0.0010	0.0001	< 0.1	0.0
SC05 CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	152	2 ^	< 0.001 0.0	0.000 0.0	0.0002	0.0001	< 0.01	0.011	0.0007	0.0003	0.1	0.0
SC06 CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	149	2	0.002 0.001		0.0005	0.0001	< 0.01	0.004	0.0007	0.0003	< 0.07	0.04
SC07 CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	139	2 ^	< 0.004 0.001	_	0.0005	0.0001	0.011	0.007	0.0005	0.0002	< 0.07	0.02
SC08 CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	138	> 0	< 0.004 0.001		0.0005	0.0001	0.012	0.005	0.0006	0.0001	< 0.07	0.03
SC09 Milford, III.	34.4	06/24/99	10:15	2.09	137	3 ^	< 0.004 0.0	0.002 0.0	0.0005	0.0001	0.012	0.003	0.0007	0.0001	< 0.07	90.0
SC10 Above Mud Cr. #3, III.	37.8	37.8 06/24/99	14:10	2.22	138	1 <	< 0.004 0.001		0.0007	0.0001	0.014	0.005	0.0007	0.0002	< 0.1	0.1
SUGAR CREEK TRIBUTARIES	TRIBUTA	RIES														
SCT1 Mud Cr. #1, Ind.	11.7	11.7 06/23/99	06:30	0.64	132	1 <	< 0.001 0.0	0.000 0.0	0.0009	0.0002	< 0.01	0.007	900000	0.0001	< 0.1	0.1
SCT2 Mud Cr. #2, III.	21.2	06/23/99	18:45	0.49 138	138	3 ^	< 0.001 0.0	0.001 0.0	0.0006	0.0002	< 0.01	0.006	0.0007	0.0003	< 0.1	0.0
SCT3 Unnamed trib., III.	28.5	06/24/99	01:20	0.16	143	ω ^	< 0.001 0.001		0.0005	0.0001	0.012	0.006	0.0003	0.0002	< 0.1	0.1

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site	Site	Dist. ¹	Date	Time	O		II	T	Tm	n	1	Λ		W		Y	
Name ¹	Location ¹	km			cms	βh	µg/L	1/gu	/L	µg/L	./L	µg/L	T	hg/L	T	ng/L	,/L
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	VER															
IR01 F	Highway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	0.011	0.000	0.0009	0.0000	1.90	0.05	0.71	0.12	0.006	0.000	0.0417	0.0007
IR02 F	Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9	0.015	0.002	0.0006	0.0000	1.85	0.08	0.89	0.10	0.008	0.002	0.0396	0.0024
IR03 E	Brook, Ind.	5.9	06/22/99	21:20	7.8	0.013	0.004	0.0008	0.0003	1.83	0.00	0.95	0.10	0.006	0.001	0.0419	0.0005
IR04 N	Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	0.012	0.003	0.0007	0.0000	1.77	90.0	0.97	0.20	0.007	0.003	0.0388	0.0015
IR05 C	CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	0.015	0.003	0.0007	0.0001	1.66	0.02	1.00	0.05	0.012	0.000	0.0375	0.0024
IR06 F	Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	0.011	0.001	0.0007	0.0001	1.69	0.05	0.90	0.13	0.034	0.004	0.0425	0.0022
$\frac{1}{1}$ IRO7	Newton Co. Fairgrounds, Ind.	21.1	06/56/99	17:30	5.7	0.010	0.000	0.0008	0.0001	1.81	0.03	0.95	0.13	0.008	0.000	0.0420	900000
	SUGAR CREEK	EK															
SC01 (CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	0.007	0.000	0.0007	0.0002	2.14	0.08	0.39	0.07	0.017	0.001	0.0552	0.0015
SC02 (CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.009	0.000	0.0003	0.0000	2.24	0.00	0.38	90.0	0.003	0.002	0.0384	0.0009
SC03 F	Highway 71 bridge, Ind.	8.6	06/23/99	00:00	0.51	0.012	0.002	0.0004	0.0001	2.34	0.12	0.42	0.15	0.005	0.001	0.0453	0.0005
SC04 S	Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	0.011	0.000	0.0005	0.0002	2.06	0.00	0.39	0.01	0.005	0.001	0.0448	0.0014
SC05 (CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	0.012	0.003	0.0002	0.0000	2.17	0.07	0.41	0.08	0.004	0.002	0.0231	0.0008
SC06 (CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	0.014	0.004	0.0003	0.0001	2.01	0.09	0.47	0.18	0.022	0.000	0.0296	0.0016
SC07 (CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	0.013	0.000	0.0003	0.0001	1.88	0.03	< 0.3	0.1	0.006	0.002	0.0268	0.0014
SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	0.013	0.000	0.0004	0.0000	1.80	0.07	0.33	0.12	0.005	0.002	0.0339	0.0015
SC09 N	Milford, III.	34.4	06/24/99	10:15	2.09	0.014	0.002	0.0003	0.0001	1.75	0.08	0.41	0.12	0.012	0.000	0.0365	0.0016
SC10 /	Above Mud Cr. #3, III.	37.8	37.8 06/24/99	14:10	2.22	0.015	0.002	0.0004	0.0001	1.65	0.02	0.51	0.19	0.007	0.001	0.0366	0.0017
	SUGAR CREEK TRIBUTARIES	BUTAI	RIES														
SCT1 1	SCT1 Mud Cr. #1, Ind.	11.7	06/23/99	06:30	0.64	0.011	0.003	0.0005	0.0001	1.82	0.01	0.35	0.13	0.003	0.001	0.0497	0.0009
SCT2 N	SCT2 Mud Cr. #2, III.	21.2	21.2 06/23/99	18:45	0.49	0.011	0.001	0.0003	0.0002	1.06	0.07	0.27	0.07	0.005	0.001	0.0361	0.0011
SCT3 1	SCT3 Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.011	0.001	0.0003	0.0000	1.00	0.02	0.25	0.14	0.016	0.003	0.0341	0.0004

¹ More complete explanations of these are found in table 1.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than] Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

Name Location km km Avg SD Avg	Site	Site	Dist.	Date	Time	0	,	Yb	Z	Zn	N	Zr
Highway 55 gage, Ind. 20 06/25/99 13:15 67 0.0061 0.0003 1.52 0.10 Highway 16 bridge, Ind. 2.0 06/25/99 16:00 6.8 0.0065 0.0007 6.52 0.13 Brook, Ind. 3.9 06/25/99 17:20 7.8 0.0067 0.0014 2.47 0.01 Meridian Rd. bridge, Ind. 12.0 06/26/99 03:15 8.1 0.0064 0.0001 0.69 0.16 0.12 Highway 41 bridge, Ind. 12.0 06/26/99 17:30 7.2 0.0073 0.0008 0.66 0.12 Ind. 3.0 06/26/99 17:30 7.2 0.0073 0.0008 0.66 0.12 Ind. 3.1 06/26/99 17:30 5.7 0.0061 0.0004 0.72 0.005 Ind. 3.0 06/22/99 17:30 5.7 0.0061 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.005 0.0004 0.72 0.00	Name	_	km			cms	З'n	3/L	в́п	3/L	в́н	µg/L
Highway 55 gage, Ind. Highway 16 bridge, Ind. Jordon Meridian Rd. bridge, Ind. Meridian Rd. bridge, Ind. Sol 66/25/99 13:15 6.7 0.0061 0.0003 1.52 0.10 Meridian Rd. bridge, Ind. Sol 66/25/99 12:20 7.8 0.0067 0.0014 2.47 0.01 Meridian Rd. bridge, Ind. Sol 66/26/99 03:15 8.1 0.0064 0.0001 0.69 0.16 CR 100W bridge, Ind. Sol 66/26/99 12:40 7.1 0.0062 0.0004 0.72 0.09 Ind. SUGAR CREEK CR 400W bridge, Ind. Sol 66/22/99 17:30 5.7 0.0061 0.000 0.54 0.09 Ind. SUGAR CREEK CR 400W bridge, Ind. On 66/22/99 17:30 5.7 0.0061 0.000 0.54 0.09 Ind. Sol 66/22/99 17:30 5.7 0.0061 0.000 0.54 0.09 CR 400W bridge, Ind. On 66/22/99 17:00 0.29 0.0029 0.000 0.54 0.09 CR 800W bridge, Ind. On 66/22/99 17:00 0.29 0.0029 0.000 0.54 0.09 CR 800W bridge, Ind. On 66/23/99 12:00 0.29 0.0029 0.000 0.54 0.00 CR 240GE bridge, III. On 66/23/99 12:00 0.24 0.0029 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.24 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.24 0.000 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.000 0.000 0.000 0.000 0.000 0.000 CR 240GE bridge, III. On 66/23/99 12:00 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000							Avg	SD	Avg	SD	Avg	SD
Highway 16 bridge, Ind. 10. 06/25/99 13:15 6.7 0.0061 0.0003 1.52 0.10 Highway 16 bridge, Ind. 20. 06/25/99 16:00 6.8 0.0065 0.0007 6.52 0.13 Brook, Ind. Meridian Rd. bridge, Ind. 20. 06/25/99 12:20 7.8 0.0067 0.0014 2.47 0.01 Meridian Rd. bridge, Ind. 20. 06/26/99 03:15 8.1 0.0064 0.0001 0.69 0.16 CR 100W bridge, Ind. 10. 06/26/99 17:30 7.2 0.0073 0.0008 0.66 0.12 Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. 10. 06/26/99 17:30 5.7 0.0061 0.0003 0.54 0.00 Ind. SUGAR CREEK TRIBUTARIES Mud Cr. #3. III. 30.1 06/24/99 0.223 0.002 0.0002 2.94 0.00 CR 2400B bridge, III. 1nd. 10. 06/23/99 17:00 0.29 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.0001 2.41 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 0.002 0.0002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.002 0.0003 1.10 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.002 0.0003 0.41 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.002 0.0003 0.41 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.002 0.0003 0.41 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.002 0.0003 0.41 0.00 CR 2400B bridge, III. 37.8 06/23/99 16:30 0.00 0.0003 0.90 0.90 CR 2400B bridge, III. 0.0003 0.90 0.90 0.90 0.90 0.90 0.90 0		IROQUOIS RI	IVER									
Highway 16 bridge, Ind. 5.0 06/25/99 15:00 6.8 0.0065 0.0007 6.52 0.13 Brook, Ind. Meridian Rd. bridge, Ind. 5.0 06/25/99 21:20 78 0.0067 0.0014 2.47 0.01 Meridian Rd. bridge, Ind. 12.0 06/26/99 09:00 7.2 0.0073 0.0008 0.66 0.12 Highway 41 bridge, Ind. 12.0 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.007 Highway 41 bridge, Ind. 12.0 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.005 Ind. SUGAR CREEK CR 400W bridge, Ind. 4.5 06/22/99 17:30 0.23 0.0001 2.41 0.09 Stateline Rd. bridge, Ind. 4.5 06/23/99 07:00 0.23 0.0007 2.01 0.004 CR 2000E bridge, Ind. 4.5 06/23/99 07:00 0.23 0.0007 1.51 0.00 CR 2300E bridge, Inl. 14.0 06/23/99 16:30 1.27 0.0027 0.0004 1.13 0.00 CR 2300E bridge, Ill. 17.1 06/23/99 16:30 1.27 0.0027 0.0004 1.13 0.00 CR 2300E bridge, Ill. 24.4 06/24/99 07:05 0.0002 0.0003 1.10 0.10 CR 2440E bridge, Ill. 30.1 06/24/99 10:15 2.00 CR 2440E bridge, Ill. 31.1 06/24/99 10:15 2.00 CR 2440E bridge, Ill. 32.1 06/24/99 10:15 2.00028 0.0003 1.10 0.00 CR 2440E bridge, Ill. 32.1 06/24/99 10:15 2.00028 0.0003 1.10 0.00 CR 2440E bridge, Ill. 32.1 06/24/99 10:15 2.00028 0.0003 0.01 0.00 CR 2440E bridge, Ill. 32.1 06/24/99 10:15 2.00028 0.0003 0.01 0.00 CR 2440E bridge, Ill. 32.1 06/24/99 10:15 2.00028 0.0003 0.01 0.00 CR 2440E bridge, Ill. 32.2 06/24/99 10:15 2.00028 0.0003 0.01 0.00 CR 2440E bridge, Ill. 32.3 06/24/99 10:15 0.0003 0.000 0.000 0.000 CR 2440E bridge, Ill. 32.3 06/24/99 10:15 0.0003 0.000 0.000 0.000 0.000 CR 2440E bridge, Ill. 32.3 06/24/99 10:15 0.0003 0.000 0.000 0.000 0.000 0.000 CR 2440E bridge, Ill. 32.4 06/24/99 10:15 0.0003 0.000 0.	IR01	Highway 55 gage, Ind.	0.0	06/22/99	13:15	6.7	0.0061	0.0003	1.52	0.10	0.078	0.006
Brook, Ind. 5.9 06/25/99 21:20 7.8 0.0067 0.0014 2.47 0.01 Meridian Rd, bridge, Ind. 9.4 06/26/99 03:15 8.1 0.0064 0.000 0.00 0.15 CR 100W bridge, Ind. 16.5 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.00 Newton Co. Fairgrounds, 21.1 06/26/99 17:30 5.7 0.0061 0.05 0.05 Ind. SUGAR CREEK 21.1 06/26/99 17:30 5.7 0.0061 0.05 0.05 CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0029 0.0003 2.94 0.23 CR 600W bridge, Ind. 4.5 06/23/99 17:00 0.21 0.0023 0.0003 2.94 0.23 CR 5000E bridge, Ill. 17.7 06/23/99 12:00 1.23 0.0023 0.0001 2.91 0.00 CR 2800E bridge, Ill. 17.7 06/23/99 16:30 1.27	IR 02	Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9		0.0007	6.52	0.13	0.074	0.004
Meridian Rd. bridge, Ind. 94 06/26/99 03:15 8.1 0.0064 0.0001 0.69 0.15 CR 100W bridge, Ind. 12.0 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.05 Highway 41 bridge, Ind. 16.5 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.05 Ind. SUGAR CREEK CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0002 0.0003 2.94 0.05 CR 600W bridge, Ind. 0.0 0.0 06/22/99 17:00 0.29 0.0002 0.0003 1.91 0.00 CR 600W bridge, Ind. 14.0 06/22/99 12:0 0.23 0.0002 0.0003 1.91 0.00 CR 800C bridge, Ill. 17.7 06/23/99 12:0 0.23 0.002 0.0001 2.41 0.0 CR 2800E bridge, Ill. 17.7 06/23/99 16:30 1.27 0.0021 0.0029 0.0002 1.1	IR03	Brook, Ind.	5.9	06/22/99	21:20	7.8	0.0067	0.0014	2.47	0.01	0.091	0.001
CR 100W bridge, Ind. 12.0 06/26/99 09:00 7.2 0.0073 0.008 0.66 0.12 Highway 41 bridge, Ind. 16.5 06/26/99 12:40 7.1 0.0062 0.0004 0.72 0.05 Ind. SUGAR CREEK CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0029 0.0003 2.94 0.23 CR 600W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0027 0.0004 2.03 0.33 Highway 71 bridge, Ind. 9.8 06/22/99 17:00 0.21 0.0027 0.0004 2.03 0.33 CR 5000E bridge, III. 14.0 06/23/99 17:00 0.51 0.0027 0.0004 1.51 0.00 CR 2800E bridge, III. 17.7 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.00 CR 2800E bridge, III. 21.4 06/23/99 16:30 1.27 0.0021 0.0003 1.11 0.00 CR	IR04	Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	0.0064	0.0001	69.0	0.16	0.092	0.003
Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. SUGAR CREEK CR 500M bridge, Ind. SUGAR CREEK CR 2800E bridge, III. Sugareline Rd. bridge, III. Sugareline R	IR05	CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	0.0073	0.0008	99.0	0.12	0.083	0.011
Newton Co. Fairgrounds, 21.1 06/26/99 17:30 5.7 0.0061 0.0003 0.54 0.09 Ind. SUGAR CREEK CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0029 0.0003 2.94 0.23 CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 0.0027 0.0004 2.03 0.33 Highway 71 bridge, Ind. 14.0 06/23/99 07:00 0.51 0.0033 0.0001 2.41 0.09 Stateline Rd. bridge, III. Ind. 14.0 06/23/99 12:00 1.23 0.0028 0.0007 1.51 0.16 CR 3000E bridge, III. 21.4 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 26.9 06/24/99 02:45 1.57 0.0014 0.0003 1.10 0.12 CR 900N bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 0.67 0.36 Milford, III. 37.8 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 01:20 0.010 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08	IR06	Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	0.0062	0.0004	0.72	0.05	0.079	0.006
SUGAR CREEK CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0029 0.0003 2.94 0.23 CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 0.0027 0.0004 2.03 0.33 Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 0.0027 0.0004 2.41 0.09 Stateline Rd. bridge, III. 14.0 06/23/99 12:00 1.23 0.0028 0.0001 2.41 0.09 CR 3000E bridge, III. 17.7 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 16:30 1.27 0.0021 0.0003 1.10 0.12 CR 240E bridge, III. 26.9 06/24/99 06:25 1.91 0.0025 0.0003 1.10 0.12 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 0.67 0.36 Milford, III.	IR07	Newton Co. Fairgrounds, Ind.	21.1	06/56/99	17:30	5.7	0.0061	0.0003	0.54	0.09	0.076	0.008
CR 400W bridge, Ind. 0.0 06/22/99 17:00 0.29 0.0029 0.0002 2.94 0.23 CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 0.0027 0.0004 2.03 0.33 Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 0.0023 0.0001 2.41 0.09 Stateline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 0.0028 0.0001 2.41 0.09 CR 3000E bridge, III. 17.7 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0021 0.0004 1.13 0.09 CR 2400E bridge, III. 21.4 06/24/99 02:45 1.57 0.0014 0.0003 1.10 0.02 CR 240E bridge, III. 30.1 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.00 Above Mud Cr. #3, III. 37.8 06/24/99 <td></td> <td>SUGAR CRE</td> <td>EEK</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		SUGAR CRE	EEK									
CR 600W bridge, Ind. 4.5 06/22/99 23:10 0.37 0.0027 0.0004 2.03 0.33 Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 0.0033 0.0001 2.41 0.09 Stateline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 0.0028 0.0007 1.51 0.09 CR 3000E bridge, III. 21.4 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0021 0.0003 1.10 0.00 CR 2440E bridge, III. 26.9 06/24/99 06:25 1.91 0.0025 0.0003 1.12 0.00 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 1.11 0.00 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.005 0.41 0.00 Mud Cr. #1, Ind. 11.7 06/23/99	SC01	CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	0.0029	0.0003	2.94	0.23	0.032	0.002
Highway 71 bridge, Ind. 9.8 06/23/99 07:00 0.51 0.0033 0.0001 2.41 0.099 Stateline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 0.0028 0.0007 1.51 0.16 CR 3000E bridge, III. 17.7 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0020 0.0003 1.10 0.12 CR 900N bridge, III. 26.9 06/24/99 02:45 1.57 0.0014 0.0003 1.20 0.02 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 1.10 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.21 Mud Cr. #2, III. 28.5 06/24/99 01:20 0.16 0.0023 0.001 0.77 0.08	SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37		0.0004	2.03	0.33	0.029	0.003
Stateline Rd. bridge, IIIInd. 14.0 06/23/99 12:00 1.23 0.0028 0.0007 1.51 0.16 CR 3000E bridge, III. 17.7 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0020 0.0003 1.10 0.12 CR 2440E bridge, III. 36.9 06/24/99 06:25 1.91 0.0025 0.0003 1.12 0.02 CR 2440E bridge, III. 34.4 06/24/99 06:25 1.91 0.0025 0.0003 1.11 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 Above Mud Cr. #1, Ind. 11.7 06/23/99 18:45 0.64 0.0028 0.0005 0.41 0.04 Mud Cr. #2, III. 21.2 06/23/99 01:20 0.05 0.0005 0.75 0.21 Onnnamed trib., IIII. 28.5 06/24/99 01:20 <td>SC03</td> <td>Highway 71 bridge, Ind.</td> <td>8.6</td> <td>06/23/99</td> <td>07:00</td> <td>0.51</td> <td>0.0033</td> <td>0.0001</td> <td>2.41</td> <td>0.09</td> <td>0.027</td> <td>0.000</td>	SC03	Highway 71 bridge, Ind.	8.6	06/23/99	07:00	0.51	0.0033	0.0001	2.41	0.09	0.027	0.000
CR 2800E bridge, III. 21.4 06/23/99 16:30 1.27 0.0021 0.0004 1.13 0.09 CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0020 0.0003 1.10 0.12 CR 900N bridge, III. 26.9 06/24/99 02:45 1.57 0.0014 0.0003 1.20 0.02 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 1.20 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0003 1.11 0.03 Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.27 Mud Cr. #2, III. 28.5 06/24/99 01:20 0.16 0.0023 0.001 0.77 0.08	SC04	Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	0.0028	0.0007	1.51	0.16	0.033	0.000
CR 2800E bridge, III. 21.4 06/23/99 20:10 1.52 0.0020 0.0003 1.10 0.12 CR 900N bridge, III. 26.9 06/24/99 02:45 1.57 0.0014 0.0003 1.22 0.02 0.02 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 0.67 0.36 Milford, III. 34.4 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.21 Mud Cr. #2, III. 28.5 06/24/99 01:20 0.16 0.0023 0.001 0.77 0.08	SC05	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	0.0021	0.0004	1.13	0.09	0.025	0.009
CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 1.22 0.02 CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 1.22 0.03 0.36 Milford, III. 34.4 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.03	SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	0.0020	0.0003	1.10	0.12	0.018	0.002
CR 2440E bridge, III. 30.1 06/24/99 06:25 1.91 0.0025 0.0003 0.67 0.36 Milford, III. 34.4 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.27 Mud Cr. #2, III. 21.2 06/23/99 01:20 0.16 0.0023 0.001 0.77 0.08	SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	0.0014	0.0003	1.22	0.02	0.016	0.002
Milford, III. 34.4 06/24/99 10:15 2.09 0.0021 0.0003 1.11 0.03 Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 Mud Cr. #1, Ind. 11.7 06/23/99 18:45 0.94 0.0017 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08	SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	0.0025	0.0003	0.67	0.36	0.019	0.004
Above Mud Cr. #3, III. 37.8 06/24/99 14:10 2.22 0.0028 0.0005 0.41 0.04 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.27 Mud Cr. #2, III. 21.2 06/23/99 18:45 0.49 0.0017 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08	SC09		34.4	06/24/99	10:15	2.09	0.0021	0.0003	1.11	0.03	0.022	0.001
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.00028 0.0005 0.59 0.27 Mud Cr. #2, III. 21.2 06/23/99 18:45 0.49 0.0017 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.00023 0.0001 0.77 0.08	SC10		37.8	06/24/99	14:10	2.22	0.0028	0.0005	0.41	0.04	0.021	0.003
Mud Cr. #1, Ind. 11.7 06/23/99 09:30 0.64 0.0028 0.0005 0.59 0.27 Mud Cr. #2, III. 21.2 06/23/99 18:45 0.49 0.0017 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08		SUGAR CREEK TRI	IBUTA]	RIES								
Mud Cr. #2, III. 21.2 06/23/99 18:45 0.49 0.0017 0.0003 7.82 0.21 Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08	SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	06:30	0.64		0.0005	0.59	0.27	0.033	0.002
Unnamed trib., III. 28.5 06/24/99 01:20 0.16 0.0023 0.0001 0.77 0.08	SCT2		21.2	06/23/99	18:45	0.49	0.0017	0.0003	7.82	0.21	0.016	0.002
	SCT3		28.5	06/24/99	01:20	0.16		0.0001	0.77	0.08	0.019	0.003

¹ More complete explanations of these are found in table 1.

Table A14. Bacterial cell counts and chlorophyll-a concentrations in composite samples collected on the Lagrangian trip of June 1999. [km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

		-					
Site	Site	Dist.	Date	Time	0	Bacterial Cell	Chlorophyll- a
Name	Location 1	km			cms	Counts	concentrations
						millions/mL	ng/L
	IROQUOIS RIVER	ER					
IR01	Highway 55 gage, Ind.	0.0	06/22/90	13:15	6.7	1.8	12.3
IR02	Highway 16 bridge, Ind.	2.0	06/22/99	16:00	8.9	0.46	6.6
IR03	Brook, Ind.	5.9	06/22/99	21:20	7.8	1.5	8.8
IR04	Meridian Rd. bridge, Ind.	9.4	06/56/99	03:15	8.1	1.5	7.2
IR05	CR 100W bridge, Ind.	12.0	06/56/99	00:60	7.2	1.2	7.1
IR06	Highway 41 bridge, Ind.	16.5	06/56/99	12:40	7.1	0.91	11.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/56/99	17:30	5.7	0.81	10.8
	SUGAR CREEK	K					
SC01	CR 400W bridge, Ind.	0.0	06/22/90	17:00	0.29	na	4.0
SC02	CR 600W bridge, Ind.	4.5	06/22/90	23:10	0.37	1.3	10.5
SC03	Highway 71 bridge, Ind.	8.6	06/23/99	07:00	0.51	0.86	8.5
SC04	Stateline Rd. bridge, IIIInd.	14.0	06/23/99	12:00	1.23	1.3	3.9
SC05	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	1.9	na
SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	2.0	2.2
SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	2.7	4.0
SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	1.4	5.5
SC09	Milford, III.	34.4	06/24/99	10:15	2.09	96.0	4.7
SC10	Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	2.5	5.5
	SUGAR CREEK TRIBU	UTARIES	\mathbf{S}				
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	06:30	0.64	0.58	3.8
SCT2	Mud Cr. #2, III.	21.2	06/23/99	18:45	0.49	2.6	1.4
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	2.1	4.7

¹ More complete explanations of these are found in table 1.

Table A15. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; m, meter; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	\circ	NO_3		NO_2	2	NH_4	\mathbf{I}_4	Kjeldahl N	N_2O	C
Name		km	Location ²			cms	mg N/L	Γ	mg N/L	1/L	mg	mg N/L	mg N/L	mg N/L	1/L
							Avg	SD	Avg	SD	Avg	SD	Value	Avg	SD
	IROQUOIS RIVER	R													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7	4.95 ().22	0.047	0.001	0.034	0.009	0.61	0.00127	0.00002
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	6.7	4.70 ().16	0.046	0.001	0.030	0.005	0.49	na	na
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00	6.7	_).12	0.045	0.001	0.033	0.005	0.51	0.00129	0.00002
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	_).17	0.045	0.001	0.030	0.002	0.55	na	na
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00	8.9	_).22	0.047	0.001	0.033	0.002	0.55	0.00139	0.00005
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8	_).15	0.049	0.000	0.037	0.001	0.58	0.00145	0.00003
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	5.00	0.15	0.055	0.001	0.039	0.007	0.55	0.00151	0.00004
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	5.34 ().29	0.059	0.001	0.029	0.002	09.0	0.00146	0.00004
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/90	12:40	7.1	4.90).24	0.054	0.001	0.018	0.014	0.57	0.00162	0.00005
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	4.81).22	0.048	0.001	0.021	0.002	0.53	0.00148	0.00005
	SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29) 89'').14	0.039	0.001	0.018	0.004	0.36	0.00135	0.00003
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	7.92).18	0.048	0.002	0.018	0.001	0.31	0.00181	0.00003
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	00:00	0.51	7.64 (80.0	0.043	0.002	0.008	0.003	0.24	0.00145	0.00005
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00	1.23	8.59 ().14	0.034	0.000	0.009	0.004	0.26	0.00098	0.00001
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27).12	0.034	0.000	0.005	0.005	0.26	0.00100	0.00003
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	8.32 ().11	0.029	0.000	0.010	0.001	0.26	0.00104	0.00005
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57).16	0.029	0.001	0.008	0.004	0.26	0.00104	0.00002
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91).12	0.032	0.001	0.011	0.001	0.26	0.00125	0.00003
SC09	Milford, III.	34.4	COF	06/24/99	10:15	5.09	8.34 ().13	0.030	0.000	0.027	0.001	0.32	0.00128	0.00006
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	8.18	0.20	0.030	0.001	0.028	0.003	0.31	0.00136	0.00003
	SUGAR CREEK TRIBUTARIES	FARIE S													
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	06:30	0.64	10.16 (0.43	0.032	0.001	0.014	0.001	0.28	0.00115	0.00006
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	11.77 (0.23	0.046	0.001	0.010	0.002	0.25	0.00130	0.00006
SCT3	Unnamed trib., III.	28.5	COF	06/24/99	01:20	0.16	12.49 (0.42	0.068	0.001	0.025	0.001	0.31	0.00168	0.00006

¹ More complete explanations of these are found in table 1 and 2.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A15. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; m, meter; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name Name IR01 Hig IR01 Hig IR01 Hig IR01 Hig IR01 Hig	Site Location	Dist.	Sample	Date	Time		2		_		DOC	ر	Sediment
	1		•		711111	>	$_{^4}^{ m PO}$	4	ካ))	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		km	Location ²			cms	mg P/L	J/C	mg/L	/L	mg C/L	$^{\circ}$	mg/L
	1000						Avg	SD	Avg	SD	Avg	SD	Value
	IROQUOIS RIVER	R											
	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7	0.023	0.005	0.044	0.004	6.04	0.45	57
	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7	0.026	0.007	0.046	0.003	6.24	0.39	94
	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7	0.020	0.010	0.044	0.004	6.30	0.39	58
	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45	6.7	0.022	0.010	0.032	0.002	4.37	0.16	na
	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	8.9	0.023	0.004	0.041	0.004	5.94	0.45	25
IR03 Bro	Brook, Ind.	5.9	COF	06/22/99	21:20	7.8	0.021	0.003	0.047	0.003	90.9	0.29	32
IR04 Me	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15		0.017	0.019	0.048	0.003	5.89	0.16	43
IR05 CR	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	0.027	0.010	0.045	0.004	6.18	0.32	47
IR06 Hig	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40		0.021	0.011	0.048	0.005	6.00	0.31	54
IR07 Nev	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	0.036	0.005	0.050	0.005	5.88	0.34	39
	SUGAR CREEK												
SC01 CR	CR 400W bridge, Ind.	0.0	COF	06/22/90		0.29	< 0.02	0.01	< 0.002	0.002	2.32	0.13	na
SC02 CR	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	< 0.02	0.01	0.003	0.002	2.41	90.0	14
SC03 Hig	Highway 71 bridge, Ind.	8.6	COF	06/23/99	00:00	0.51	< 0.02	0.00	< 0.002	0.002	na	na	13
SC04 Stat	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00	1.23	< 0.02	0.00	< 0.002	0.001	na	na	10
SC05 CR	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27	< 0.02	0.00	< 0.002	0.001	2.12	0.03	5
SC06 CR	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	< 0.02	0.00	< 0.002	0.001	na	na	16
SC07 CR	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	< 0.02	0.00	< 0.002	0.001	na	na	14
SC08 CR	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	< 0.02	0.01	< 0.002	0.002	2.49	0.11	28
SC09 Mil	Milford, III.	34.4	COF	06/24/99	10:15	2.09	< 0.02	0.01	0.013	0.000	2.14	0.10	34
SC10 Abo	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	< 0.02	0.01	0.014	0.001	2.31	0.12	49
	SUGAR CREEK TRIBUT	FARIES	70										
SCT1 Mu	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30	0.64	< 0.02	0.01	900'0	0.001	2.28	0.10	42
SCT2 Mu	SCT2 Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	< 0.02	0.00	< 0.002	0.001	2.18	0.16	5
SCT3 Uni	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	< 0.02	0.01	0.012	0.002	na	na	20

¹ More complete explanations of these are found in table 1 and 2.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A16. Concentrations of major ions in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Name IR01 High IR01 High IR01 High IR01 High IR01 High IR01 High	OHOORI	km	. 2									!	,	
	IOHOOM		Location_			cms	mg/L	ت.	mg/L	ر	mg C/L	7.	hg/L	ر
	IROOHOI						Avg	SD	Avg	SD	Avg	SD	Avg	SD
		UOIS RIVER	8											
	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45	6.7	25.1	1.5	62.9	1.2	47.9	0.1	8.8	1.3
	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	6.7	25.2	1.7	63.8	1.1	47.7	0.3	8.7	1.4
	tway 55 gage, Ind.	0.0	COF	06/22/90	12:00	6.7	25.3	1.7	64.5	1.1	47.7	0.1	8.5	1.1
	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	25.5	1.6	65.4	0.4	38.6	0.2	23	9
)	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00	8.9	25.0	0.5	59.5	9.0	46.4	0.1	8.1	1.5
IR03 Broo	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8	25.6	0.5	61.3	6.0	47.2	0.2	8.4	1.7
IR04 Meri	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	25.0	8.0	55.5	0.2	45.6	0.4	7.1	1.2
IR05 CR1	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	24.3	1.0	51.9	1.0	44.6	0.1	7.5	1.3
IR06 High	Highway 41 bridge, Ind.	16.5	COF	06/52/90	12:40	7.1	24.0	9.0	54.6	6.0	45.5	0.0	8.0	6.0
IR07 New	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	25.2	1.0	55.6	0.2	45.8	0.1	8.2	1.8
	SUGAR	CREEK												
SC01 CR 4	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29	18.0	na	52.5	na	46.9	0.0	6	2
SC02 CR6	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37	19.9	na	54.6	na	48.4	0.1	7	7
SC03 High	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	18.3	na	59.1	na	50	na	∞	4
SC04 State	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00	1.23	20.1	na	61.3	na	47	na	12	4
SC05 CR3	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27	19.8	na	63.0	na	43.6	0.1	7	4
SC06 CR2	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	20.0	na	65.7	na	47	na	7	4
SC07 CR9	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	20.3	na	62.1	na	46	na	14	4
SC08 CR2	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	19.9	na	59.3	na	44.7	0.5	15	4
SC09 Milfe	Milford, III.	34.4	COF	06/24/99	10:15	5.09	20.4	na	56.9	na	44.5	0.3	25	9
SC10 Abov	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	20.6	na	57.1	na	43.7	0.1	22	6
	SUGAR CREEK TR	K TRIBUTARIES	SIES											
SCT1 Mud	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30	0.64	21.0	na	9.69	na	45.6	0.2	16	5
	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	21.9	na	47.1	na	43.0	0.1	13	9
SCT3 Unna	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	22.4	na	43.6	na	46	na	13	9

¹ More complete explanations of these are found in table 1.

 $^{^2\ \}mathrm{Location}$ is the position within the channel where the grab sample was collected.

Table A16. Concentrations of major ions in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

	Site Location	DISI.	Sample	Date	IIIIe	>	Na	ದ	∡	,	Mg	50	S		SIO_2	75
Name ¹		km	Location ²			cms	mg/L	T	mg	mg/L	mg/L	Γ	mg/L	ر	mg/L	T
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS	IS RIVER	R													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45	6.7	8.6	0.2	1.9	0.1	21	1	71	3	0.9	0.3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7	6.7	0.2	2.0	0.1	21	0	73	0	6.2	0.1
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7	6.6	0.1	1.9	0.2	21	_	74	0	6.2	0.0
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45	6.7	9.4	0.1	1.9	0.0	23	_	73	0	6.3	0.2
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	8.9	9.1	0.2	2.0	0.1	20	_	70	_	6.2	0.1
IR03	Brook, Ind.	5.9	COF	06/22/99	21:20	7.8	9.6	0.1	2.0	0.1	21	0	72	0	6.4	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	8.8	0.2	2.0	0.1	20	0	69	7	9.9	0.2
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	8.5	0.5	2.2	0.2	19	_	29	\mathfrak{S}	6.9	0.3
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1	8.7	0.4	2.0	0.2	20	_	89	7	8.9	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	9.1	0.2	1.9	0.1	20	-	69	_	9.9	0.0
	SUGAR	CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29	6.5	0.1	96.0	0.01	28	0	77	1	6.4	0.1
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37	7.4	0.3	0.98	0.02	28	0	75	0	5.3	0.1
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	6.4	0.1	1.0	0.0	28	0	77	_	4.2	0.1
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00	1.23	9.9	0.0	1.1	0.0	29	0	78	_	5.5	0.1
SC05	CR 3000E bridge, 111.	17.7	COF	06/23/99	16:30	1.27	9.9	0.0	1.1	0.0	28	0	73	_	4.7	0.0
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	6.2	0.2	1.1	0.1	29	_	72	_	4.8	0.2
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	0.9	0.2	1.1	0.0	28	0	70	_	3.8	0.2
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	5.9	0.2	1.0	0.1	28	0	69	_	4.0	0.1
SC09	Milford, III.	34.4	COF	06/24/99	10:15	2.09	6.5	0.3	1.1	0.0	28	П	69	0	4.4	0.1
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	6.4	0.3	1.1	0.0	27	_	29	0	4.4	0.1
	SUGAR CREEK TRI	RIBUTARIES	SIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	06:30	0.64	5.8	0.1	86.0	0.03	27	1	92	1	9.9	0.2
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	5.9	0.1	0.83	0.04	28	0	62	0	5.1	0.2
		000	ני	0												

¹ More complete explanations of these are found in table 1.

 $^{^2\ \}mathrm{Location}$ is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	δ	Al		As	ì	В		Ba		Be	
Name ¹		km	Location ²		S	cms	µg/L		µg/L	ب	µg/L	1	µg/L	,	J/gm	1
						,	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/99 1	11:45	6.7	1.99	80.0	1.13	0.03	54	3	64.1	8.0	< 0.005	0.013
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7	1.96	0.15	1.13	0.02	99	7	64.2	8.0	< 0.005	0.008
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7	2.11	0.16	1.16	0.04	55	4	64.1	1.1	< 0.005	0.007
IR01	Highway 55 gage, Ind.	0.0	20m LEW		11:45	2.9	1.92	0.11	1.05	0.03	53	0	58.5	1.6	< 0.01	0.00
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	8.9	2.16	0.21	1.12	0.00	51	7	62.0	1.0	< 0.005	0.021
IR03	Brook, Ind.	5.9	COF		21:20	7.8	1.82	0.19	1.19	0.03	54	7	61.7	1.3	< 0.005	0.008
IR04	Meridian Rd. bridge, Ind.	9.4	COF		03:15	8.1	2.18	0.11	1.13	0.02	50	7	61.3	0.5	900.0	0.002
IR05	CR 100W bridge, Ind.	12.0	COF) 66/97/90	00:60	7.2	2.92	0.17	1.21	0.02	48	\mathcal{S}	58.8	1.2	< 0.005	0.010
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	2.00	0.03	1.16	0.02	48	_	58.2	1.7	< 0.005	0.007
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	1.77	0.05	1.21	0.03	49	1	58.8	0.5	0.010	0.006
	SUGAR CREEK	CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	0 00:71	.29	1.81	0.24	0.65	0.04	52	0	55.0	1.0	< 0.02	0.01
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	_	0.37	0.80	0.11	0.54	0.04	51	1	51.9	1.1	< 0.02	0.01
SC03	Highway 71 bridge, Ind.	8.6	COF		07:00 0	0.51	1.16	0.13	0.49	0.03	48	1	50.0	0.4	< 0.02	0.00
SC04	Stateline Rd. bridge, IllInd.	14.0	COF		_	.23	1.83	0.22	0.52	0.04	43	_	49.6	1:1	< 0.02	0.00
SC05	CR 3000E bridge, III.	17.7	COF		16:30	1.27	1.58	60.0	0.49	0.04	45	7	46.4	1.0	< 0.02	0.02
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	_	.52	1.88	0.11	0.49	90.0	4	1	47.9	1.4	< 0.02	0.00
SC07	CR 900N bridge, III.	26.9	COF	06/24/99 (02:45 1	1.57	1.23	0.12	0.46	90.0	45	1	44.2	0.5	< 0.01	0.00
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99 (1.91	1.18	0.03	0.52	0.04	47	1	42.2	0.4	< 0.01	0.00
SC09	Milford, III.	34.4	COF	06/24/99	10:15 2	2.09	1.81	0.04	0.56	0.03	49	7	42.0	1:1	< 0.01	0.01
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99 1	14:10 2	.22	1.82	0.09	0.58	0.04	47	1	40.8	0.0	< 0.01	0.01
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF) 66/53/90	06:30	0.64	2.53	0.18	0.47	0.03	32	1	50.5	8.0	< 0.01	0.01
SCT2	Mud Cr. #2, III.	21.2	COF			0.49	0.93	0.11	0.49	0.04	55	1	30.7	0.2	< 0.01	0.00
SCT3	Unnamed trib., III.	28.5	COF	06/24/99 (01:20 0	0.16	1.26	60.0	0.80	0.03	62	1	34.6	9.0	< 0.01	0.01

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time Q		Bi	Сд	75	Ce		Co	
Name		km	Location ²		cms		µg/L	Hg/L	Ţ	T/gn	Г	J/gm	ب
						Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R										
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45 6	.7 0.0017		0.010	0.001	0.0219	0.0003	0.077	0.014
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55 6	100.0	•	0.011	0.001	0.0203	0.0002	0.081	0.013
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00 6		•	0.024	0.002	0.0212	0.0006	0.080	0.011
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45 6		•	0.010	0.004	0.0177	0.0011	0.171	0.013
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00 6		•	0.015	0.001	0.0172	0.0000	0.079	0.007
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20 7	7.8 0.0026	•	0.011	0.002	0.0196	0.0005	0.098	0.011
IR04	Meridian Rd. bridge, Ind.	9.4	COF		03:15 8	0.0024	4 0.0012	0.012	0.002	0.0201	0.0006	0.087	0.011
IR05	CR 100W bridge, Ind.	12.0	COF	06/52/90	00:60	2 0.001	•	0.012	0.001	0.0165	0.0005	0.085	0.012
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40 7	.1 0.001:	•	0.020	0.002	0.0178	0.0008	0.091	0.012
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30 5	0.0010	0.0003	0.008	0.001	0.0205	0.0004	0.095	0.005
	SUGAR CREEK	REEK											
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00 0.2	0.0028		0.136	0.003	0.0267	0.0007	0.017	0.010
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10 0.37			0.026	0.000	0.0236	0.0010	0.018	0.012
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00 0.51	_		0.014	0.001	0.0229	0.0010	< 0.004	0.018
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00 1.2	.23 0.0014	4 0.0008	0.019	0.001	0.0211	0.0000	< 0.004	0.014
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30 1.2			0.012	0.002	0.0109	0.0010	0.013	0.011
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10 1.5			0.015	0.004	0.0117	0.0007	0.018	0.012
SC07	CR 900N bridge, III.	26.9	COF	06/54/99	02:45 1.5	.57 0.0018		0.004	0.002	0.0116	0.0007	0.021	0.008
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25 1.9	.91 0.0013		0.023	0.003	0.0172	0.0011	0.033	0.008
SC09	Milford, III.	34.4	COF	06/24/99	10:15 2.09			0.014	0.004	0.0143	0.0000	0.042	0.013
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10 2.2	.22 0.0015		0.005	0.002	0.0159	0.0008	0.044	0.005
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/53/90	09:30 0.64			0.010	0.003	0.0255	0.0034	0.484	0.023
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45 0.49			0.007	0.001	0.0135	0.0010	0.019	0.011
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20 0.]	0.16 0.0022	2 0.0017	< 0.002	0.001	0.0159	0.0015	0.048	0.008

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	\circ	Ċ		Cs		O	Cu	Dy	
Name		km	Location ²			cms	µg/L	J	J/gµ	ب	µg/L	T	hg/L	Г
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45	6.7	< 0.2	0.0	0.0014	0.0002	0.71	0.01	0.0054	0.0001
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7	< 0.2	0.0	0.0034	0.0007	0.72	0.01	0.0047	0.0007
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7	< 0.2	0.1	0.0048	0.0014	0.83	0.02	0.0049	0.0005
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	< 0.4	0.1	< 0.003	0.000	0.74	0.04	0.0041	0.0001
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	8.9	< 0.2	0.0	0.0022	0.0012	0.78	0.02	0.0042	0.0005
IR03	Brook, Ind.	5.9	COF	06/22/99	21:20	7.8	< 0.2	0.1	0.0045	0.0021	0.80	0.02	0.0047	0.0000
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	< 0.2	0.1	0.0020	0.0014	0.83	0.03	0.0049	0.0000
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	< 0.2	0.0	0.0054	0.0012	1.01	0.04	0.0043	0.0006
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1	< 0.2	0.1	0.0047	0.0010	1.01	0.01	0.0042	0.0001
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	< 0.2	0.1	0.0027	0.0016	0.80	0.02	0.0046	0.0010
	SUGAR CREEK	CREEK												
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29	< 0.4	0.1	0.0024	0.0004	66.0	0.05	0.0055	0.0002
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37	< 0.4	0.2	0.0025	0.0014	0.47	0.07	0.0049	0.0004
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	< 0.4	0.2	0.0047	0.0012	0.36	0.03	0.0046	0.0004
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00	1.23	< 0.4	0.1	0.0019	0.0010	0.48	0.02	0.0051	0.0008
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27	< 0.4	0.1	0.0018	0.0017	0.51	0.02	0.0026	0.0003
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	< 0.4	0.1	0.0027	0.0023	0.54	0.02	0.0024	0.0005
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	< 0.4	0.1	< 0.003	0.001	0.54	0.01	0.0027	0.0004
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	< 0.4	0.0	< 0.003	0.001	0.47	0.04	0.0033	0.0004
SC09	Milford, III.	34.4	COF	06/24/99	10:15	2.09	< 0.4	0.1	< 0.003	0.002	0.54	0.04	0.0039	0.0002
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	< 0.4	0.1	< 0.003	0.001	0.56	0.04	0.0033	0.0004
	SUGAR CREEK TRIBUTARI	(IBUTA)	RIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/60	06:30	0.64	< 0.4	0.1	< 0.003	0.001	0.54	0.03	0.0065	0.0008
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99 18:45	18:45	0.49	< 0.4	0.2	< 0.003	0.002	0.57	0.01	0.0037	0.0003
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	< 0.4	0.1	< 0.003	0.001	0.49	0.03	0.0038	0.0005

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time Q		Er	Eu		Fe		PS	þ	Hg
Name		km	Location ²		CII	cms	µg/L	1/gµ	T	µg/L	ت	1/gn	T	ng/L
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg SD
	IROQUOIS RIVER	S RIVE	R											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45 6	5.7 0.0047		0.0005	0.0012	12	0	0.0053	9000'0	0.3 0.1
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55 6	5.7 0.004			0.0011	111	0	0.0055	0.0005	
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00 6				0.0006	111	_	0.0050	0.0002	
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45 6	6.7 0.0041	.1 0.0006	0.0020	0.0005	10	0	0.0052	0.0006	<0.2 0.1
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00 6				0.0006	7.8	0.2 (0.0047	0.0002	
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20 7	7.8 0.003		·	0.0015	111	_	0.0054	0.0008	
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/52/90	03:15 8	3.1 0.0046			0.0010	9.2	0.2 (0.0047	0.0004	
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2 0.004			0.0010	6.3	0.1	0.0055	0.0003	
IR06	Highway 41 bridge, Ind.	16.5	COF	06/52/90	12:40 7	7.1 0.0037	•	9000.0	0.0006	5.8	0.3 (0.0040	9000.0	
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30 5	5.7 0.0042	.2 0.0007	6000.0	0.0006	7.7	0.8	0.0049	0.0011	<0.2 0.3
	SUGAR CREEK	CREEK												
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00 0.3	0.29 0.0036			0.0017	22	0	0.0048	0.0005	0.5 0.2
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10 0	0.37 0.0028	8 0.0002	V	0.0010	14	0	0.0058	0.0005	<0.2 0.1
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00 0.:	0.51 0.002			0.0013	8.6	0.1	0.0058	0.0016	
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00 1.3				0.0009	4.2	0.2 (0.0056	9000.0	
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30 1.3			< 0.0004	0.0013	4.5	0.2 (0.0029	0.0003	
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10 1	1.52 0.002			0.0006	3.8	0.2 (0.0037	0.0004	
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45 1	1.57 0.0017	7 0.0006		0.0004	3.5	0.1	0.0035	0.0005	1.7 0.2
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25 1.9	0.0029			0.0004	2.7	0.2 (0.0040	0.0003	
SC09	Milford, III.	34.4	COF	06/24/99	10:15 2.0	2.09 0.0025			0.0002	2.5	0.1	0.0058	0.0001	
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10 2.	2.22 0.0033	3 0.0005		0.0006	2.4	0.1 (0.0045	0.0009	9.2 0.2
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30 0.0	0.64 0.0032			0.0012	3.1	0.2 (0.0065	0.0005	0.3 0.1
SCT2	Mud Cr. #2, III.	21.2	COF		18:45 0.				0.0002	4.5		0.0048	0.0002	<0.2 0.2
SCT3	Unnamed trib., III.	28.5	COF	06/24/99	01:20 0.	0.16 0.0027	7 0.0001	0.0011	0.0004	2.8	0.2 (0.0046	0.0008	0.8 0.1

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date '	Time	\circ	Ho			La	Li	j.	Т	Lu	Mn	_
Name	-	km	Location ²		S	cms	hg/L	٦	hg/L	/L	J/gh	7/	В́п	µg/L	µg/L	J
						7	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7 0.	0.0012	0.0002	0.0145	0.0007	4.12	0.05	0.0015	0.0001	22.6	9.0
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7 0.	0.0010	0.0001	0.0133	0.0002	4.10	0.04	0.0015	0.0003	19.2	0.3
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7 0.	0.0011	0.0002	0.0139	0.0005	4.17	0.14	0.0015	0.0002	22.8	0.2
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45	6.7 0.	0.0012	0.0003	0.0129	0.0004	4.40	0.17	0.0013	0.0001	22.7	1.0
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	6.8 0.	0.0010	0.0001	0.0113	0.0003	3.68	0.05	0.0013	0.0001	24.5	0.3
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8 0.	0.0008	0.0000	0.0131	0.0004	3.96	0.04	0.0013	0.0003	29.6	0.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/52/90	03:15	8.1 0.	0.0011	0.0001	0.0133	0.0007	3.55	0.13	0.0015	0.0001	15.3	0.5
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2 0.	0.0010	0.0002	0.0114	0.0005	3.48	0.13	0.0014	0.0003	18.8	9.0
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1 0.	0.0009	0.0002	0.0115	0.0006	3.62	0.04	0.0014	0.0001	26.1	0.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7 0.	0.0011	0.0001	0.0128	0.0005	3.76	0.15	0.0012	0.0001	32.0	0.3
	SUGAR CREEK	CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00 0	0.29 0.	0.0011	0.0002	0.0192	0.0005	4.39	0.21	0.0005	0.0001	21.2	0.0
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10 0	0.37 0.	0.0010	0.0001	0.0176	0.0001	4.50	0.05	0.0005	0.0000	21.5	0.4
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/96	07:00 0	0.51 0.	0.0011	0.0003	0.0167	0.0002	4.09	0.50	0.0005	0.0001	24.2	0.3
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00 1	1.23 0.	0.0013	0.0002	0.0155	0.0002	3.65	0.24	0.0006	0.0001	11.8	0.2
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30 1	1.27 0.	0.0006	0.0001	0.0000	0.0001	3.64	0.07	0.0003	0.0001	8.24	0.30
SC06	CR 2800E bridge, III.	21.4	COF	06/23/96	20:10 1	1.52 0.	0.0007	0.0002	0.0096	0.0009	3.72	0.17	0.0004	0.0001	5.00	0.20
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45 1	1.57 0.	0.0007	0.0001	0.0097	0.0002	3.61	0.05	0.0003	0.0001	3.6	0.2
SC08	CR 2440E bridge, III.	30.1	COF		06:25 1	1.91 0.	0.0008	0.0001	0.0128	0.0008	3.71	0.15	0.0003	0.0000	10.4	9.0
SC09	Milford, III.	34.4	COF	06/24/99	10:15 2	2.09 0.	0.0009	0.0001	0.0121	0.0006	3.67	0.10	0.0004	0.0000	8.1	0.3
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10 2	2.22 0.	0.0009	0.0001	0.0127	0.0004	3.57	0.13	0.0004	0.0001	6.9	0.1
	SUGAR CREEK TRIBUTARIES	[BUTA]	RIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/53/96	09:30 0	0.64 0.	0.0014	0.0001	0.0189	0.0002	2.82	80.0	0.0008	0.0001	13.0	0.2
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45 0	0.49 0.	0.0008	0.0002	0.0117	0.0003	4.09	0.24	0.0003	0.0001	3.8	0.1
SCT3	Unnamed trib., III.	28.5	COF	06/24/99	01:20 0	0.16 0.	0.0008	0.0001	0.0127	0.0009	4.94	0.01	0.0003	0.0001	9.0	0.8

¹ More complete explanations of these are found in table 1.

 $^{^{2}\ \}mathrm{Location}$ is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date T	Time	ð	Mo		PN	Ν̈́		Pb	q	Pr	
$Name^{1}$		km	Location ²		၁	cms	µg/L		µg/L	µg/L	Ţ	µg/L	T	µg/L	T
						A	Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R												
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/99	1:45	6.7 4.	4.88 0.1	4 0.0188	9000'0	0.95	0.12	0.026	0.002	0.0039	0.0001
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	1:55	6.7 4.	_		0.0010	1.01	0.13	0.027	0.002	0.0038	0.0003
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	2:00	6.7 4.	_		_	1.12	0.30	0.030	0.001	0.0039	0.0000
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45	6.7 5.	5.00 0.1		_	1.21	0.10	0.020	0.001	0.0030	0.0005
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99 10	16:00	6.8 4.	4.80 0.1	5 0.0157	_	1.15	0.11	0.026	0.000	0.0031	0.0000
IR03	Brook, Ind.	5.9	COF	06/22/99	21:20	7.8 4.	4.93 0.0		0.0013	1.19	0.19	0.033	0.002	0.0035	0.0004
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99 03	03:15	8.1 4.	4.56 0.06		0.0023	1.12	0.14	0.041	0.015	0.0040	0.0003
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99 09	00:60	7.2 4.	4.45 0.1	2 0.0131	0.0015	1.18	0.13	0.048	0.000	0.0029	0.0003
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99 13	12:40	7.1 4.	4.78 0.27	7 0.0157	0.0009	1.61	0.09	0.024	0.011	0.0031	0.0003
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99 17	7:30	5.7 4.	1.72 0.08	8 0.0180	0.0002	96.0	0.21	0.022	0.000	0.0034	0.0002
	SUGAR CREEK	CREEK													
SC01	CR 400W bridge, Ind.	0.0	COF	1 66/22/90	00:7	.29 4.	4.57 0.03	3 0.0214	0.0013	0.48	0.28	0.172	0.005	0.0051	0.0002
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10 C	0.37 4.	4.53 0.12	2 0.0203	0.0005	0.49	0.39	0.032	0.001	0.0045	0.0003
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99 0	07:00	0.51 4.	4.39 0.0	1 0.0195		0.09	0.52	0.024	0.001	0.0044	0.0002
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99 13	12:00 1	.23 4.	~			< 0.01	0.30	0.024	0.007	0.0044	0.0002
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99 10	16:30 1	.27 4.	_		0.0014	0.53	0.40	0.016	0.002	0.0022	0.0002
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99 20	20:10 1	.52 4.	4.33 0.0			0.44	0.30	0.019	0.005	0.0025	0.0002
SC07	CR 900N bridge, III.	26.9	COF	06/24/99 03	02:45 1	.57 4.	4.21 0.0	6 0.0117	0.0006	0.41	0.21	0.017	0.003	0.0025	0.0003
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99 00	06:25 1	1.91 4.	4.11 0.0		0.0001	0.47	0.17	0.015	0.001	0.0034	0.0001
SC09	Milford, III.	34.4	COF	06/24/99 10	10:15 2	2.09 4.	4.05 0.08	8 0.0148	0.0010	0.44	0.13	0.017	0.002	0.0031	0.0001
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99 14	14:10 2	2.22 4.	4.07 0.09	9 0.0155	0.0006	0.38	0.20	0.012	0.002	0.0034	0.0002
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES												
SCT1	Mud Cr. #1, Ind.	11.7	COF	60/53/90	06:30	0.64 3	3.77 0.01	1 0.0244	0.0027	0.38	0.15	0.053	0.001	0.0053	0.0002
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99 18	18:45 C	0.49 3.	3.24 0.08	8 0.0134		0.13	0.20	0.010	0.001	0.0031	0.0003
SCT3	Unnamed trib., III.	28.5	COF	06/24/99 0	01:20 C	0.16 3.	3.70 0.03	3 0.0160	0.0007	0.21	0.19	0.008	0.003	0.0034	0.0003

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	0	Rb		Re	a)	S	Sb	Se	4)	Sm	n	Sr	
Name	1	km	Location ²			cms	I/gµ	. 1	T/gn	Ţ	в́п	µg/L	µg/L	Ţ	hg/L	T	µg/L	ت
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R															
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7	06.0	0.01	0.0155	0.0007	0.147	0.002	0.36	0.12	0.0047	0.0001	262	3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	6.7	0.92	0.02	0.0166	0.0010	0.148	0.007	0.38	0.10	0.0036	0.0008	261	0
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00	6.7	0.94	0.01	0.0157	0.0004	0.153	0.003	0.36	0.07	0.0041	0.0013	270	7
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	0.90	0.02	0.0136	0.0006	0.156	0.006	0.24	0.00	0.0038	0.0002	264	9
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00	8.9	0.93	0.02	0.0144	0.0005	0.153	0.010	0.28	0.04	0.0036	0.0006	245	_
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8	0.88	0.01	0.0152	0.0004	0.154	0.001	0.39	0.10	0.0039	0.0002	256	∞
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/52/90	03:15	8.1	0.87	0.01	0.0156	0.0003	0.148	0.004	0.25	0.15	0.0044	0.0004	234	\mathcal{S}
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	0.93	0.02	0.0138	0.0002	0.164	0.008	0.33	0.10	0.0041	0.0008	228	4
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1	0.87	0.01	0.0138	0.0006	0.155	0.001	0.38	0.13	0.0038	0.0004	234	7
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	0.83	0.01	0.0151	0.0003	0.152	0.004	0.49	0.02	0.0034	0.0007	237	4
124	SUGAR CREEK	CREEK																
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29 (0.571	0.000	0.0119	0.0002	0.100	900.0	0.55	0.17	0.0052	0.0008	192	2
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37 (0.596	00.0	0.0120	0.0007	0.114	0.002	69.0	0.03	0.0047	0.0001	180	_
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51 (0.014	0.0129	0.0003	0.140	0.005	0.59	0.10	0.0044	0.0003	171	4
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00			0.005	0.0144	0.0007	0.117	0.000	0.52	0.19	0.0046	0.0000	150	_
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30			2.007	0.0135	0.0007	0.117	0.006	0.39	0.16	0.0025	0.0005	150	7
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52 (800.0	0.0139	0.0002	0.123	0.012	0.41	0.22	0.0022	0.0004	150	α
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	0.47	0.01	0.0120	0.0005	0.118	0.001	0.59	80.0	0.0021	0.0010	144	4
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	0.47	0.02	0.0116	0.0001	0.116	0.002	0.48	0.05	0.0048	0.0009	142	4
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.50	0.00	0.0107	0.0004	0.136	0.005	0.57	0.07	0.0043	0.0005	140	7
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	0.51	0.00	0.0112	0.0008	0.148	0.005	0.54	0.07	0.0043	0.0007	139	1
	SUGAR CREEK TRIBUTARIES	IBUTAI	SIES															
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30	0.64	0.42	0.00	0.0125	0.0007	0.107	0.002	0.68	0.03	0.0046	900000	131	1
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	0.42	0.02	0.0088	0.0004	0.091	0.005	0.82	0.07	0.0030	0.0008	135	\mathcal{C}
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.47	0.01	0.0088	0.0004	0.080	0.003	0.59	0.03	0.0034	0.0003	136	4

¹ More complete explanations of these are found in table 1.

 $^{^2\ \}mathrm{Location}$ is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	0	Ta		Tb	Te	0	T	Th	Ti	
Name	1	km	Location ²		C	cms	$\mu g/L$		µg/L	µg/L	Ţ	µg/L	\L	µg/L	
							Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg SD	Ω
	IROQUOIS RIVER	S RIVEI	R												
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45	6.7 <	< 0.001 0.001	1 0.0007	0.0001	0.011	0.005	0.0009	0.0002	< 0.1 0.	1-
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	6.7	< 0.001 0.000	0 0.0007	0.0002	0.010	0.004	0.0010	0.0002	< 0.1 0.	0.0
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00	6.7	< 0.001 0.000	0 0.0007	0.0001	< 0.009	0.003	0.0012	0.0004	< 0.1 0.1	
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	< 0.004 0.001	1 0.0006	0.0001	0.011	0.007	0.0014	0.0005		0.7
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00	8.9	0.001 0.001	0.0006	0.0002	< 0.009	0.004	0.0009	0.0002	< 0.1 0.1	Τ.
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8	< 0.001 0.001	1 0.0005	0.0002	0.011	0.007	0.0010	0.0002	< 0.1 0.	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	0.002 0.001	1 0.0007	0.0001	< 0.009	0.004	0.0008	0.0001	_	0.
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2 <	< 0.001 0.000	0 0.0006	0.0002	< 0.009	0.003	0.0011	0.0003	< 0.1 0.2	0.2
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1	< 0.001 0.000	0.0007	0.0002	< 0.009	0.001	0.0009	0.0000	< 0.1 0.1	
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7 <	< 0.001 0.000	0.0006	0.0003	0.010	0.00	0.0008	0.0001	< 0.1 0	
	SUGAR CREEK	REEK													
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00 0	> 67.0	< 0.001 0.000	0 0.0007	0.0000	0.011	0.004	0.0008	0.0001	< 0.1 0	<u> -</u>
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10 0	.37 <	< 0.001 0.000	0 0.0007	0.0002	< 0.01	0.002	0.0006	0.0001	< 0.1 0	Τ.
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00 0	> 15.1	< 0.001 0.001	1 0.0006	0.0002	0.012	0.005	0.0005	0.0000	< 0.1 0.1	
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00 1	1.23	0.001 0.001	1 0.0008	0.0001	< 0.01	0.010	0.0007	0.0002	_	
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30 1	. 27	< 0.001 0.000	0 0.0004		< 0.01	0.004	0.0003	0.0001	_	0.2
902S	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10 1	.52 <	< 0.001 0.001	1 0.0004	0.0001	< 0.01	0.004	0.0005	0.0003	_	
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45 1	. 57	< 0.004 0.002	2 0.0004	0.0001	< 0.009	0.003	0.0005	0.0001	< 0.2 0.0	0:
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25 1	> 16.1	< 0.004 0.000	0 0.0004	0.0000	0.012	0.001	0.0005	0.0002	< 0.2 0.1	Τ.
SC09	Milford, III.	34.4	COF	06/24/99	10:15 2	2.09 <	< 0.004 0.002	0.0006	0.0003	< 0.009	0.003	0.0004	0.0002	< 0.2 0.	Τ.
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10 2	2.22 <	< 0.004 0.000	0 0.0006	0.0001	0.011	0.003	0.0007	0.0004	< 0.2 0.	-
	SUGAR CREEK TRIBUTARIES	BUTAF	RIES												
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/66	06:30	0.64 <	< 0.004 0.003	3 0.0007	0.0001	0.013	0.004	0.0007	0.0000	< 0.2 0.	1.
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45 C	0.49 <	< 0.004 0.002	0.0005	0.0001	0.012	0.004	0.0007	0.0001	< 0.2 0.	
SCT3	Unnamed trib., III.	28.5	COF	06/24/99	01:20 C	0.16	< 0.004 0.002	0.0007	0.0000	0.012	0.002	0.0006	0.0001	< 0.2 0.	

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	ð	I	_	T	Tm	n	_	Λ		W	
Name	-	km	Location ²			cms	µg/L	Ţ	I/gµ	/L	J/gµ	T	µg/L	Ţ	µg/L	Ţ
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVE	R													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/52/90	11:45	6.7	0.012	0.000	0.0009	0.0001	1.91	0.01	0.85	80.0	0.004	0.002
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	6.7	0.012	0.001	0.0008	0.0001	1.93	0.01	0.81	0.03	0.004	0.000
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00	6.7	0.012	0.002	0.0006	0.0001	1.91	0.03	0.84	90.0	0.025	0.011
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45	6.7	0.011	0.000	0.0007	0.0001	1.83	90.0	0.73	0.15	0.016	0.004
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00	8.9	0.013	0.002	0.0008	0.0002	1.85	0.02	0.88	90.0	900.0	0.003
IR03	Brook, Ind.	5.9	COF		21:20	7.8	0.010	0.000	0.0008	0.0000	1.88	0.00	86.0	90.0	0.007	0.002
IR04	Meridian Rd. bridge, Ind.	9.4	COF		03:15	8.1	0.011	0.001	0.0009	0.0001	1.80	0.03	86.0	0.11	0.007	0.002
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	0.012	0.001	0.0007	0.0001	1.67	0.01	1.17	0.03	0.008	0.004
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1	0.012	0.001	0.0007	0.0001	1.73	0.04	1.22	0.01	0.008	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.012	0.001	0.0008	0.0003	1.76	0.05	1.23	0.20	0.009	0.003
	SUGAR CREEK	CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29	800.0	0.001	0.0004	0.0001	2.24	90.0	0.34	0.05	0.011	0.002
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37	0.010	0.000	0.0005	0.0001	2.24	0.08	0.39	0.04	900.0	0.001
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	0.010	0.002	0.0005	0.0002	2.22	0.01	0.35	0.14	0.004	0.001
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	06/23/99	12:00	1.23	0.012	0.001	0.0005	0.0001	2.11	90.0	0.40	0.05	0.003	0.002
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27	0.012	0.001	0.0002	0.0000	2.04	0.01	0.32	0.16	0.002	0.001
SC06	CR 2800E bridge, III.	21.4	COF	06/23/96	20:10	1.52	0.012	0.001	0.0002	0.0001	2.16	0.03	0.37	0.27	0.003	0.002
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	0.012	0.001	0.0002	0.0001	1.88	0.04	< 0.3	0.1	900.0	0.002
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	0.012	0.001	0.0004	0.0000	1.75	90.0	0.27	0.10	0.005	0.001
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	5.09	0.012	0.001	0.0004	0.0001	1.72	90.0	0.37	0.13	0.013	0.002
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	0.013	0.000	0.0004	0.0001	1.71	0.09	0.42	0.13	0.008	0.003
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/53/90	06:30	0.64	0.011	0.001	0.0005	0.0000	1.78	90.0	0.28	0.12	0.010	0.001
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	0.013	0.001	0.0004	0.0000	1.06	0.05	< 0.3	0.1	0.002	0.001
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.010	0.001	0.0004	0.0001	0.99	0.05	0.38	0.12	0.005	0.001

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Name		DIST.	Sample	Date	Tille	>	X		Yb	O	7	U7	Z	_
		km	Location ²		J	cms	µg/L	. 1	µg/L	/L	б'n	µg/L	µg/L	Ţ
						_f	Avg	SD	Avg	SD	Avg	SD	Avg	SD
,	IROQUOIS RI	S RIVER	R											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/99 1	1:45	6.7 0.0	0.0438	0.0018	0.0072	0.0004	0.57	0.01	0.0786	0.0042
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99 1	11:55	6.7 0.0	0.0421	0.0017	0.0066	0.0006	0.82	90.0	0.0875	0.0055
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99 1	12:00	6.7 0.0	0.0430	0.0007	0.0073	0.0011	3.81	0.02	0.0912	0.0052
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99 1	11:45	6.7 0.0	0.0414	0.0033	0.0061	0.0004	0.70	0.04	0.085	0.000
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99 1	16:00	6.8 0.0	0.0388	0.0002	0.0079	0.0001	1.42	0.01	0.0793	0.0011
IR03	Brook, Ind.	5.9	COF	06/25/99 2	21:20	7.8 0.0	0.0412	0.0016	0.0057	0.0004	3.50	0.10	0.0816	0.0039
IR04	Meridian Rd. bridge, Ind.	9.4	COF	0 66/56/90	03:15	8.1 0.0	0.0415	0.0015	0.0075	0.0008	4.22	0.07	0.0778	0.0017
IR05	CR 100W bridge, Ind.	12.0	COF	0 66/56/90	00:60	7.2 0.0	0.0381	0.0007	0.0064	0.0005	1.57	0.14	0.0967	0.0046
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99 1	12:40	7.1 0.0	0.0392	0.0010	0.0059	0.0005	1.47	0.20	0.0736	0.0009
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99 1	17:30	5.7 0.0	0.0414	0.0003	0.0062	0.0011	0.67	0.05	0.0726	0.0036
	SUGAR CRE	CREEK												
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99 1	17:00 ().29 0.0	0.0453	0.0012	0.0029	0.0004	6.16	0.14	0.030	0.001
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99 2	23:10 (0.37 0.0	0.0390	0.0015	0.0027	0.0001	2.66	0.16	0.024	0.002
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99 0	00:70).51 0.0	0.0410	0.0017	0.0026	0.0002	1.68	0.09	0.032	0.009
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99 1	12:00	1.23 0.0	0.0464	0.0015	0.0030	0.0002	0.97	0.19	0.023	0.003
SC05	CR 3000E bridge, III.	17.7	COF		16:30	1.27 0.0	0.0227	0.0007	0.0020	0.0002	0.63	0.18	0.019	0.004
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99 2	20:10	1.52 0.0	0.0279	0.0016	0.0016	0.0006	0.48	0.25	0.021	0.004
SC07	CR 900N bridge, III.	26.9	COF	06/24/99 0	02:45	1.57 0.0	0.0260	0.0009	0.0019	0.0003	0.93	0.08	0.023	0.001
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99 0	06:25	1.91 0.0	0.0361	0.0012	0.0025	0.0003	48.1	0.5	0.020	0.000
SC09	Milford, III.	34.4	COF	06/24/99 1	10:15	2.09 0.0	0.0378	0.0017	0.0025	0.0003	26.3	0.1	0.025	0.002
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99 1	14:10	2.22 0.0	0.0381	0.0013	0.0021	0.0003	1.40	0.01	0.025	0.001
	SUGAR CREEK TRIBUT	r ,	ARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	0 66/23/90	06:30	0.64 0.0	0.0568	600000	0.0037	0.0010	66.9	90.0	0.031	0.004
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99 1	18:45 (0.49 0.0	0.0334	0.0012	0.0020	0.0004	14.8	0.4	0.014	0.004
SCT3	Unnamed trib., III.	28.5	COF	06/24/99 0	01:20	0.16 0.0	0.0349	0.0019	0.0021	0.0006	0.38	0.07	0.018	0.002

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A18. Field measurements for samples collected on the Lagrangian trip of June 1999.

[km, kilometers, O, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemans per centimeter; mg/L, milligrams per liter; m, meters; LEW, left edge of water (facing downstream); COF, center of flow, na, not available]

Site	Site Location ¹	Dist. ¹	Sample	Date	Time	O	Hd	Temperature	Specific	Dissolved Oxygen
Name		km	Location ²			cms		ွ	Conductance	mg/L
									μS/cm	
	0	QUOIS RIVER	R							
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7 7	69.7	23.3	592	7.3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/90	11:55	•	7.80	23.4	591	7.5
IR01	Highway 55 gage, Ind.	0.0	COF	06/22/90	12:00		7.82	23.5	591	7.8
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/90	11:45		98.	23.7	593	8.0
IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/90	16:00		7.89	24.4	588	7.9
IR03	Brook, Ind.	5.9	COF	06/22/90	21:20	7.8.7	68.	24.3	598	7.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/52/90	03:15	8.1 7	7.92	23.9	583	7.0
IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2 7	7.90	23.6	563	9.9
IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99	12:40	7.1 7	7.85	24.6	575	8.9
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7 7	7.84	25.1	587	6.5
	SUGAR CREEK	CREEK								
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29 7	66.7	24.8	589	13.2
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/90	23:10	0.37 8	8.40	22.3	594	8.0
SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	na	na	na	na
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00	1.23 8	8.27	21.9	009	13.2
SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27 8	8.27	25.0	583	12.6
SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52 8	8.24	24.2	583	8.9
SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57 8	8.10	23.3	969	7.1
SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	8.10	22.8	590	8.9
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	8.07	22.7	578	7.0
SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22 8	8.08	22.9	576	7.0
	SUGAR CREEK TRIBUTARIES	IBUTA	RIES							
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30	0.64 8	8.18	21.4	603	11.1
SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	8.32	24.2	565	8.6
SCT3	Unnamed trib., III.	28.5	COF	06/24/99	01:20	0.16 7	7.91	22.2	909	7.1

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A19. Bacterial cell counts and chlorophyll-a concentrations in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; na, not available]

Name! km Location² cms Counts concentration IROQUOIS RIVIER 0.0 4m LEW 06/25/99 11:45 6.7 na 9.17 IRO Highway 55 gage, Ind. 0.0 0 8m LEW 06/25/99 11:45 6.7 na 9.17 IRO1 Highway 55 gage, Ind. 0.0 0 COF 06/25/99 11:45 6.7 na 9.17 IRO1 Highway 55 gage, Ind. 0.0 0 COF 06/25/99 11:45 6.7 na 9.17 IRO1 Highway 55 gage, Ind. 0.0 0 COF 06/25/99 11:45 6.7 na 7.54 IRO2 Highway 16 bridge, Ind. 2.0 COF 06/25/99 11:45 6.7 na 8.47 IRO3 Brook, Ind. 1.2 0 COF 06/25/99 11:20 7.8 na 8.89 IRO3 Meridian Rd bridge, Ind. 16.5 COF 06/26/99 12:40 7.1 na 11.0 SCG CR 600W bridge, Ind. 1.0 COF 06/26/99 17:30 5.7 na 11.0 SCO2 CR 600W bridge, Ind. 1.0 COF 06/26/99 17:30 5.7 na 11.0 SCO3 Highway 1 bridge, Ind. <th>Site</th> <th>Site Location¹</th> <th>Dist.1</th> <th>Sample</th> <th>Date</th> <th>Time</th> <th>\circ</th> <th>Bacterial Cell</th> <th>Chlorophyll-a</th>	Site	Site Location ¹	Dist.1	Sample	Date	Time	\circ	Bacterial Cell	Chlorophyll-a
Highway 55 gage, Ind. Highway 55 gage, Ind. O. 4m LEW O. 6/25/99 11:45 6.7 na Highway 55 gage, Ind. O. 0 8m LEW O. 0 COF O. 0 COF Highway 55 gage, Ind. O. 0 20m LEW O. 0 20m, EW O. 0 20m,	Name		km	Location ²			cms	Counts millions/mL	concentrations µg/L
Highway 55 gage, Ind. Highway 55 gage, Ind. O. 0 8m LEW 06/25/99 11:55 6.7 na Highway 55 gage, Ind. O. 0 COF 06/25/99 11:55 6.7 na Highway 55 gage, Ind. O. 0 20m LEW 06/25/99 11:55 6.7 na Highway 16 bridge, Ind. S. 0 COF 06/25/99 11:45 6.7 na Highway 16 bridge, Ind. D. 0 COF 06/25/99 11:45 6.7 na Highway 16 bridge, Ind. D. 0 COF 06/25/99 11:45 6.7 na Newtidian Rd. bridge, Ind. S. 0 COF 06/25/99 11:45 6.7 na Meridian Rd. bridge, Ind. D. 0 COF 06/25/99 11:45 6.7 na SUGAR CREEX CR 100W bridge, Ind. D. 0 COF 06/25/99 11:40 7.2 na SUGAR CREEX CR 400W bridge, Ind. D. 0 COF 06/25/99 17:30 5.7 na CR 500W bridge, Ind. D. 0 COF 06/25/99 17:30 0.37 na Highway 71 bridge, Ind. D. 0 COF 06/25/99 17:30 1.27 na CR 200E bridge, III. D. 1.7 COF 06/23/99 12:01 1.27 na CR 200E bridge, III. D. 1.4 COF 06/23/99 16:30 1.27 na CR 200E bridge, III. D. 1.7 COF 06/23/99 16:30 1.27 na CR 240E bridge, III. D. 1.7 COF 06/23/99 16:30 1.27 na CR 240E bridge, III. D. 1.7 COF 06/23/99 16:30 1.27 na CR 240E bridge, III. D. 1.7 COF 06/23/99 16:30 1.27 na CR 240E bridge, III. D. 1.7 COF 06/23/99 16:30 1.27 na CR 240E bridge, III. D. 1.7 COF 06/24/99 16:15 2.09 na CR 240E bridge, III. D. 1.7 COF 06/24/99 16:15 2.09 na CR 240E bridge, III. D. 26.9 COF 06/24/99 16:15 2.09 na Above Mud Cr. #3, III. D. 26.9 COF 06/24/99 16:10 2.22 SUCAR CREEX TRIBUTARIES Mud Cr. #3, III. D. 28.5 COF 06/24/99 01:20 0.16 na Mud Cr. #2, III. D. 28.5 COF 06/24/99 01:20 0.16 na D. 28.5 COF 06/24/99 01:20 0.16 na D. 28.5 COF 06/24/99 01:20 0.16 na		IROQUOI	S RIVE	R)
Highway 55 gage, Ind. Highway 55 gage, Ind. O.O COF 66/25/99 11:55 6.7 na Highway 55 gage, Ind. O.O COF 66/25/99 12:00 6.7 1.85 Highway 16 bridge, Ind. S.9 COF 66/25/99 12:00 6.8 1.67 Brook, Ind. Meridian Rd. bridge, Ind. S.9 COF 66/26/99 12:07 7.8 na Highway 1 bridge, Ind. S.9 COF 66/26/99 12:07 7.8 na Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. SUGAR CREEK CR 500W bridge, Ind. Highway 71 bridge, Ind. SUGAR CREEK CR 500W bridge, Ind. SUGAR CREEK CR 600W bridge, Ind. SUGAR CREEK CR 2000 bridge, Ind. SUGAR COF 66/22/99 17:00 0.29 na CR 2000 bridge, Ind. SUGAR COF 66/23/99 12:00 1.23 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:00 1.23 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:00 1.23 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:01 1.27 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:01 1.27 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:01 1.27 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:01 1.27 na CR 2000 bridge, III. SUGAR COF 66/23/99 12:01 1.27 na CR 240E bridge, III. SUGAR CREEK TRIBUTARIES Mud Cr. #3, III. SUGAR CREEK TRIBUTARIES Mud Cr. #4, Ind. Mud Cr. #2, III. SUGAR CREEK TRIBUTARIES Mud Cr. #2, III. SUGAR CREEK TRIBUTARIES Mud Cr. #3, III. SUGAR CREEK TRIBUTARIES	IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/22/90	11:45	6.7	na	9.17
Highway 55 gage, Ind. Highway 55 gage, Ind. O. 20m LEW 66/25/99 12:00 6.7 1.85 Highway 16 bridge, Ind. S. O COF 66/25/99 11:45 6.7 na Highway 16 bridge, Ind. S. O COF 66/25/99 12:20 7.8 na Meridian Rd. bridge, Ind. SOF 66/25/99 12:20 7.8 na Meridian Rd. bridge, Ind. SOF 66/25/99 12:30 7.2 na Highway 41 bridge, Ind. SOF 66/25/99 12:40 7.1 na Newton Co. Fairgrounds, Ind. SOF 66/25/99 12:40 7.1 na SOF 66/25/99 12:40 7.1 na Newton Co. Fairgrounds, Ind. SOF 66/25/99 12:40 7.1 na SOF 66/25/99 12:40 7.1 na Newton Co. Fairgrounds, Ind. SOF 66/25/99 12:40 7.1 na CR 400W bridge, Ind. 4.5 COF 66/25/99 12:30 8.7 na Highway 71 bridge, Ind. 4.5 COF 66/25/99 12:30 1.27 na CR 3000E bridge, Inl. Ind. 17.7 COF 66/23/99 12:5 na CR 2800E bridge, Ill. 30.1 COF 66/23/99 16:30 1.27 na CR 2800E bridge, Ill. 30.1 COF 66/23/99 10:15 2.09 na Milford, Ill. Above Mud Cr. #3, Ill. 37.8 COF 66/24/99 10:15 2.09 na SOGAR CREEK TRIBUTARIES Mud Cr. #3, Ill. COF 66/23/99 10:15 2.09 na SOGAR CREEK TRIBUTARIES Mud Cr. #3, Ill. SOF 66/23/99 10:15 2.09 na SOGAR CREEK TRIBUTARIES Mud Cr. #3, Ill. SOF 66/23/99 10:15 2.09 na SOGAR CREEK TRIBUTARIES Mud Cr. #3, Ill. SOF 66/23/99 10:10 1.20 na SOGAR CREEK TRIBUTARIES Mud Cr. #3, Ill. SOF 66/23/99 10:10 1.20 na SOGAR CREEK TRIBUTARIES	IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/22/99	11:55	6.7	na	9.17
Highway 55 gage, Ind. Highway 16 bridge, Ind. 2.0 COF 06/25/99 16:00 6.8 1.67 Brook, Ind. Brook, Ind. 5.9 COF 06/25/99 12:20 7.8 na Meridian Rd. bridge, Ind. 5.9 COF 06/25/99 21:20 7.8 na Meridian Rd. bridge, Ind. 12.0 COF 06/26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 12.0 COF 06/26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 16.5 COF 06/26/99 12:40 7.1 na SUGAR CREEK CR 600W bridge, Ind. 16.5 COF 06/26/99 17:30 5.7 na SUGAR CREEK CR 2400W bridge, Ind. 17.1 COF 06/22/99 17:30 5.7 na Highway 71 bridge, Ind. 17.1 COF 06/22/99 12:10 1.37 na CR 2800E bridge, III. Ind. 17.1 COF 06/23/99 12:00 1.23 na CR 240E bridge, III. 21.4 COF 06/23/99 12:07 CR 240E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 10:15 2.09 na SUGAR CREEK TRIBUTARIES Mud Cr. #4, Ind. Mud Cr. #4, Ind. Mud Cr. #2, III. 28.5 COF 06/23/99 11:00 0.16 na	IR01	Highway 55 gage, Ind.	0.0	COF	06/22/99	12:00	6.7	1.85	12.9
Highway 16 bridge, Ind. So COF 66,25/99 16:00 6.8 1.67 Brook, Ind. Meridian Rd. bridge, Ind. So COF 66,26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 12.0 COF 66,26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 12.0 COF 66,26/99 12:40 7.1 na Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. SUGAR CREEK CR 3000E bridge, Inl. 17.7 COF 66,23/99 12:00 1.23 na CR 2400E bridge, III. CR 2800E bridge, III. 21.4 COF 66,23/99 16:30 1.27 na CR 2400E bridge, III. CR 2400E bridge, III. 21.4 COF 66,23/99 16:30 1.27 na CR 2400E bridge, III. 30.1 COF 66,23/99 10:15 2.09 na CR 2440E bridge, III. 31.4 COF 66,23/99 10:15 2.09 na Milford, III. 31.4 COF 66,24/99 10:15 2.09 na Above Mud Cr. #3, III. 31.8 COF 66,23/99 10:15 2.09 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. Mud Cr. #1, Ind. Substitute Coff 66,23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 66,23/99 11:00 0.16 na	IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/22/99	11:45	6.7	na	7.54
Brook, Ind. 5.9 COF 06/25/99 21:20 7.8 na Meridian Rd. bridge, Ind. 9.4 COF 06/26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 12.0 COF 06/26/99 03:15 8.1 1.26 Highway 41 bridge, Ind. 16.5 COF 06/26/99 17:30 5.7 na CR 400W bridge, Ind. 21.1 COF 06/26/99 17:30 5.7 na CR 600W bridge, Ind. 4.5 COF 06/22/99 17:00 0.29 na Highway 71 bridge, Ind. 4.5 COF 06/22/99 23:10 0.37 na CR 3000E bridge, Ill. 17.7 COF 06/23/99 10:0 1.70 na CR 2800E bridge, Ill. 17.7 COF 06/23/99 10:0 1.2 na CR 2800E bridge, Ill. 17.7 COF 06/23/99 10:15 1.0 na CR 2800E bridge, Ill. 17.7 COF 06/24/99 10:15 <td>IR02</td> <td>Highway 16 bridge, Ind.</td> <td>2.0</td> <td>COF</td> <td>06/22/99</td> <td>16:00</td> <td>8.9</td> <td>1.67</td> <td>8.47</td>	IR02	Highway 16 bridge, Ind.	2.0	COF	06/22/99	16:00	8.9	1.67	8.47
Meridian Rd. bridge, Ind. 9.4 COF 06/26/99 03:15 8.1 1.26 CR 100W bridge, Ind. 12.0 COF 06/26/99 09:00 7.2 na Highway 41 bridge, Ind. 16.5 COF 06/26/99 17:30 5.7 na Newton Co. Fairgrounds, Ind. 21.1 COF 06/26/99 17:30 5.7 na CR 400W bridge, Ind. 0.0 COF 06/22/99 17:00 0.29 na CR 600W bridge, Ind. 4.5 COF 06/22/99 23:10 0.37 na Highway 71 bridge, Ind. 9.8 COF 06/23/99 07:00 0.51 1.70 Stateline Rd. bridge, III. 17.7 COF 06/23/99 10:01 1.23 na CR 2800E bridge, III. 21.4 COF 06/23/99 06:15 1.70 na CR 2800E bridge, III. 26.9 COF 06/24/99 06:25 1.91 na CR 2400E bridge, III. 37.8 COF 06/24/99 06:25 1.91 na Above Mud Cr. #3, III. 37.8 </td <td>IR03</td> <td>Brook, Ind.</td> <td>5.9</td> <td>COF</td> <td>06/22/99</td> <td>21:20</td> <td>7.8</td> <td>na</td> <td>8.89</td>	IR03	Brook, Ind.	5.9	COF	06/22/99	21:20	7.8	na	8.89
CR 100W bridge, Ind. 12.0 COF 06/26/99 09:00 7.2 na Highway 41 bridge, Ind. 16.5 COF 06/26/99 12:40 7.1 na SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 06/22/99 17:30 5.7 na CR 600W bridge, Ind. 4.5 COF 06/22/99 17:00 0.29 na Highway 71 bridge, Ind. 9.8 COF 06/22/99 23:10 0.37 na CR 3000E bridge, Ind. 14.0 COF 06/23/99 07:00 0.51 1.70 Stateline Rd. bridge, III. 17.7 COF 06/23/99 12:00 1.23 na CR 2800E bridge, III. 21.4 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 21.4 COF 06/23/99 06:25 1.91 na CR 240E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na CR 240E bridge, III. 37.8 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na CR 240E K TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 06/24/99 11:00 0.10 na	IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/56/99	03:15	8.1	1.26	80.9
Highway 41 bridge, Ind. 16.5 COF 06/26/99 12:40 7.1 na Newton Co. Fairgrounds, Ind. 21.1 COF 06/26/99 17:30 5.7 na SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 06/22/99 17:00 0.29 na CR 600W bridge, Ind. 14.0 COF 06/23/99 17:00 0.51 1.70 Stateline Rd. bridge, III. 17.7 COF 06/23/99 12:00 1.23 na CR 3000E bridge, III. 21.4 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 26.9 COF 06/23/99 16:30 1.27 na CR 2440E bridge, III. 30.1 COF 06/24/99 10:15 2.09 na Milford, III. 37.8 COF 06/24/99 10:15 2.09 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 06/24/99 01:20 0.16 na	IR05	CR 100W bridge, Ind.	12.0	COF	06/56/99	00:60	7.2	na	8.37
Newton Co. Fairgrounds, Ind. 21.1 COF 06/26/99 17:30 5.7 na SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 06/22/99 17:00 0.29 na CR 600W bridge, Ind. 4.5 COF 06/22/99 23:10 0.37 na Highway 71 bridge, Ind. 14.0 COF 06/23/99 07:00 0.51 1.70 Stateline Rd. bridge, Ill. 17.7 COF 06/23/99 10:01 1.27 na CR 2800E bridge, Ill. 21.4 COF 06/23/99 06:10 1.52 na CR 240E bridge, Ill. 30.1 COF 06/24/99 06:15 1.91 na CR 2440E bridge, Ill. 30.1 COF 06/24/99 06:25 1.91 na Above Mud Cr. #3, Ill. 37.8 COF 06/24/99 14:10 2.22 na Mud Cr. #1, Ind. 11.7 COF 06/24/99 14:10 2.22 na Mud Cr. #2, I	IR06	Highway 41 bridge, Ind.	16.5	COF	06/56/99		7.1	na	12.7
SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 06/22/99 17:00 0.29 na CR 600W bridge, Ind. 4.5 COF 06/22/99 23:10 0.37 na Highway 71 bridge, Ind. 9.8 COF 06/23/99 17:00 0.51 1.70 Stateline Rd. bridge, Ill. 17.7 COF 06/23/99 12:0 1.27 na CR 2800E bridge, Ill. 17.7 COF 06/23/99 16:30 1.27 na CR 2800E bridge, Ill. 21.4 COF 06/23/99 16:30 1.27 na CR 240E bridge, Ill. 26.9 COF 06/24/99 02:45 1.57 na CR 2440E bridge, Ill. 30.1 COF 06/24/99 06:25 1.91 na Above Mud Cr. #3, Ill. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Amud Cr. #1, Ind. 21.2 COF 06/23/99 18:45 0.49 na Mud	IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/56/99	17:30	5.7	na	11.6
CR 400W bridge, Ind. CR 600W bridge, Ind. CR 600W bridge, Ind. Highway 71 bridge, Ind. Stateline Rd. bridge, Ill. CR 3000E bridge, Ill. CR 2800E bridge, Ill. CR 2800E bridge, Ill. CR 240E bridge, Ill. CR 2440E bridge, Ill. CR 2440E bridge, Ill. Above Mud Cr. #3, Ill. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. Mud Cr. #2, Ill. Z8.5 CR 600W bridge, Ind. CR 260W 0622/99 17:00 0.51 COF 06/23/99 17:00 1.23 CR 260 07:00 0.51 COF 06/23/99 16:30 1.27 CR 260 COF 06/23/99 16:30 1.27 CR 240E bridge, Ill. 30.1 COF 06/24/99 06:25 1.91 COF 06/24/99 10:15 2.09 CR 2440E bridge, Ill. 37.8 COF 06/24/99 14:10 2.22 CR 260 COF 06/23/99 18:45 0.49 CR 2440E bridge, Ill. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. COF 06/23/99 18:45 0.49 COF 06/23/99 18:45 COF 06/23/99		SUGAR	CREEK						
CR 600W bridge, Ind. 4.5 COF 06/22/99 23:10 0.37 na Highway 71 bridge, Ind. 9.8 COF 06/23/99 07:00 0.51 1.70 Stateline Rd. bridge, III. 14.0 COF 06/23/99 12:00 1.23 na CR 3800E bridge, III. 21.4 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 21.4 COF 06/24/99 02:45 1.57 na CR 2440E bridge, III. 30.1 COF 06/24/99 02:45 1.57 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 10:15 2.09 na SUGAR CREEK TRIBUTARIES SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 21.2 COF 06/23/99 10:20 0.16 na Mud Cr. #2, III. 28:5 COF 06/24/99 01:20 0.16 na	SC01	CR 400W bridge, Ind.	0.0	COF	06/22/90	17:00	0.29	na	4.54
Highway 71 bridge, Ind. 9.8 COF 06/23/99 07:00 0.51 1.70 Stateline Rd. bridge, IIIInd. 14.0 COF 06/23/99 12:00 1.23 na CR 3000E bridge, III. 17.7 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 26.9 COF 06/23/99 20:10 1.52 na CR 2440E bridge, III. 30.1 COF 06/24/99 02:45 1.57 na Milford, III. 37.8 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 06/24/99 01:20 0.16 na	SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	na	5.71
Stateline Rd. bridge, IIIInd. 14.0 COF 06/23/99 12:00 1.23 na CR 3000E bridge, III. 17.7 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 21.4 COF 06/23/99 16:30 1.27 na CR 2400E bridge, III. 26.9 COF 06/24/99 02:45 1.57 na CR 2440E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Milford, III. 34.4 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 06/24/99 01:20 0.16 na	SC03	Highway 71 bridge, Ind.	8.6	COF	06/23/99	07:00	0.51	1.70	8.54
CR 3000E bridge, III. 17.7 COF 06/23/99 16:30 1.27 na CR 2800E bridge, III. 21.4 COF 06/23/99 20:10 1.52 na CR 2400E bridge, III. 26.9 COF 06/24/99 02:45 1.57 na CR 2440E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Milford, III. 34.4 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Mud Cr. #2, III. 28.5 COF 06/24/99 01:20 0.16 na	SC04	Stateline Rd. bridge, IllInd.	14.0	COF	06/23/99	12:00	1.23	na	3.50
CR 2800E bridge, III. 21.4 COF 06/23/99 20:10 1.52 na CR 900N bridge, III. 26.9 COF 06/24/99 02:45 1.57 na CR 2440E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Milford, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Nud Cr. #2, III. 28.5 COF 06/24/99 01:20 0.16 na	SC05	CR 3000E bridge, III.	17.7	COF	06/23/99	16:30	1.27	na	2.56
CR 900N bridge, III. 26.9 COF 06/24/99 02:45 1.57 na CR 2440E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Milford, III. 34.4 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SC06	CR 2800E bridge, III.	21.4	COF	06/23/99	20:10	1.52	na	2.27
CR 2440E bridge, III. 30.1 COF 06/24/99 06:25 1.91 na Milford, III. 34.4 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SC07	CR 900N bridge, III.	26.9	COF	06/24/99	02:45	1.57	na	6.61
Milford, III. 34.4 COF 06/24/99 10:15 2.09 na Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 09:30 0.64 na Mud Cr. #2, III. 21.2 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SC08	CR 2440E bridge, III.	30.1	COF	06/24/99	06:25	1.91	na	5.65
Above Mud Cr. #3, III. 37.8 COF 06/24/99 14:10 2.22 na SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 09:30 0.64 na Mud Cr. #2, III. 21.2 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SC09	Milford, III.	34.4	COF	06/24/99	10:15	2.09	na	5.58
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 06/23/99 18:45 0.64 na Mud Cr. #2, III. 21.2 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SC10	Above Mud Cr. #3, III.	37.8	COF	06/24/99	14:10	2.22	na	4.43
Mud Cr. #1, Ind. 11.7 COF 06/23/99 09:30 0.64 na Mud Cr. #2, III. 21.2 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na		SUGAR CREEK TR	IBUTA	RIES					
Mud Cr. #2, III. 21.2 COF 06/23/99 18:45 0.49 na Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/90	06:30	0.64	na	3.00
Unnamed trib., III. 28.5 COF 06/24/99 01:20 0.16 na	SCT2	Mud Cr. #2, III.	21.2	COF	06/23/99	18:45	0.49	na	1.33
	SCT3	Unnamed trib., III.	28.5	COF	06/24/99		0.16	na	3.46

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A20. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of September 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Location ¹		Dist.	Date	Time	$Type^2$	0	NO_3)3	NO_2)2	NH_4	4	Kjeldahl N	N_2O	
km	km					cms	mg N/L	NL	mg N/L	V.L	mg N/L	T	mg N/L	mg N/L	
						sec	Avg.	SD	Avg.	SD	Avg.	SD	Value	Avg	SD
IROQUOIS RIVER															
Highway 55 gage, Ind. 0.0 09/13/99		09/13/60		16:15	Comp.	0.59	09.0	0.03	0.007	0.000	0.083	0.001	0.51	0.00086	9000000
			(1	21:40	Comp.	0.57	0.67	0.00	0.011	0.001	0.091	0.003	0.55	0.00099	0.00002
Brook, Ind. 5.9 09/14/99 (09/14/99		$\overline{}$	00:80	Comp.	0.67	0.53	0.01	0.014	0.000	0.095	0.003	0.58	0.00114	0.00001
Meridian Rd. bridge, Ind. 9.4 09/14/99	09/14/99			16:30	Comp.	0.63	0.72	0.00	0.019	0.001	0.102	0.000	0.50	0.00147	0.00027
CR 100W bridge, Ind. 12.0 09/14/99 2	09/14/99	6	(1	2:20	Comp.	0.62	0.65	0.02	0.018	0.000	0.082	0.001	0.51	0.00079	0.00010
Highway 41 bridge, Ind. 16.5 09/15/99 0	09/15/99	_	0	9:20	Comp.	0.64	0.47	0.01	0.015	0.001	0.100	0.005	0.50	0.00085	0.00004
Newton Co. Fairgrounds, Ind. 21.1 09/15/99 2	09/15/99	6	7	20:40	Comp.	0.54	0.53	0.00	0.014	0.001	0.088	0.000	0.56	0.00093	0.00007
SUGAR CREEK															
CR 400W bridge, Ind. 0.0 09/13/99 1	09/13/99		_	8:30	Grab	0.020	0.15	0.01	0.006	0.000	0.033	0.002	0.22	0.00044	0.00004
CR 600W bridge, Ind. 4.5 09/13/99 2	09/13/99		$\mathcal{C}_{\mathbf{J}}$	0:10	Grab	0.029	0.95	0.01	0.073	0.000	0.098	0.001	0.32	0.00072	0.00002
Highway 71 bridge, Ind. 9.8 09/13/99 1	09/13/99	_	$\overline{}$	9:10	Grab	0.061	0.99	0.03	0.024	0.001	< 0.007	0.002	0.23	0.00067	0.00005
Stateline Rd. bridge, IIIInd. 14.0 09/14/99 (09/14/99	_	$\overline{}$	00:90	Grab	0.117	0.72	0.01	0.009	0.001	< 0.007	0.000	0.34	0.00062	0.00002
	09/14/99			15:00	Grab	0.132	0.50	0.01	0.008	0.000	< 0.007	0.001	0.14	0.00044	0.00003
CR 2800E bridge, III. 21.4 09/15/99	09/15/99		_	00:10	Grab	0.162	0.77	0.03	0.006	0.000	< 0.007	0.001	0.12	0.00066	0.00000
26.9 09/15/99	09/15/99			13:30	Grab	0.155	0.63	0.01	0.006	0.000	0.008	0.000	0.23	0.00053	0.00004
CR 2440E bridge, III. 30.1 09/15/99 2	09/12/99	6		23:00	Grab	0.170	0.52	0.00	0.006	0.000	< 0.007	0.003	0.26	0.00057	0.00001
Milford, III. 34.4 09/16/99 C	09/16/99	6	\circ	9:20	Grab	0.162	0.45	0.01	0.006	0.000	0.032	0.004	0.30	0.00051	0.00003
Above Mud Cr. #3, III. 37.8 09/16/99 1	09/16/99	9 1	Ţ	6:50	Grab	0.159	0.40	0.00	0.006	0.000	0.013	0.001	0.18	0.00051	0.00000
SUGAR CREEK TRIBUTARIES	FARIES	S													
Mud Cr. #1, Ind. 11.7 09/13/99	11.7 09/13/99	09/13/99		19:40	Grab	0.044	0.04	0.01	0.002	0.000	< 0.007	0.002	0.23	0.00059	0.00011
Mud Cr. #2, III. 21.2 09/15/99	09/15/99	09/15/99		01:20	Grab	0.012	1.01	0.01	0.027	0.001	0.018	0.000	0.47	0.00105	0.00002

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A20. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

											Suspended	g
Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	0	PO_4	P		DOC	Sediment	ıt
Name	-	km				cms	mg P/L	mg/L	L	mg C/L	mg/L	
						sec	Avg. SD	Avg.	SD	Avg. SD	•	
	IROQUOIS RIVER	ER										
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.05 0.00	0.059	0.005		25	
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.06 0.00	0.072	0.002	6.0 0.2		6
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.07 0.00	0.070	0.006		17	7
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63		0.066	0.004			_
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62		0.067	0.005			6
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:50	Comp.	0.64		0.073	0.008			5
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.07 0.00	0.066	0.003	6.2 0.1	33	~
	SUGAR CREEJ	K										
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	< 0.02 0.00	0.019	0.005	2.8 0.1	\$ >	
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.04 0.00	0.046	0.007	2.8 0.0	< > 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 <	10
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	_	< 0.007	0.001	2.4 0.0	\$ < 3	10
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	< 0.02 0.00	< 0.007	0.002	2.3 0.2	47	7
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	< 0.02 0.00	< 0.007	0.003	2.2 0.2	\$ \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	_	< 0.007	0.008	na na	14	4
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	< 0.02 0.00	< 0.007	0.005	2.5 0.0) 11	_
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	< 0.02 0.00	< 0.007	0.005	2.4 0.1	(,,	5
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	< 0.02 0.00	0.017	0.005	2.8 0.0	12	~1
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	< 0.02 0.00	0.021	0.005	2.8 0.1	na	
	SUGAR CREEK TRIBI	UTARIES	S									
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	< 0.02 0.00	< 0.007	0.001	2.1 0.3	3 17	_
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	< 0.02 0.00	0.00	0.006	3.4 0.0	45	10

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A21. Concentrations of major ions in samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	0	CI	SO_4	$HCO_3 + CO_3$. CO ₃	Br	
Name	-	km				cms	mg/L	mg/L	mg C	C/L	µg/L	Г
						sec	Value	Value	Avg.	SD	Avg	SD
	IROQUOIS RIVER	VER										
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	39	92	54	0	27	2
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	42	92	55	_	23	4
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	39	92	55	0	19	0
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	54	77	54	0	25	9
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	52	77	54	0	22	7
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	38	74	54	_	18	7
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	49	75	55	0	24	7
	SUGAR CREEK	${f E}$										
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	15	100	28	0	16	4
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	21	87	57	0	14	7
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	17	104	99	0	17	\mathcal{C}
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	20	1111	99	_	16	0
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	20	117	48	0	17	7
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	19	114	46	na	15	_
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	18	115	48	0	14	7
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	19	110	20	0	15	_
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	22	108	53	0	17	_
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	23	107	51	0	21	0
	SUGAR CREEK TRIBUTARIES	SUTARIE	S									
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	21	106	52	2	21	3
SCT2	SCT2 Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	13	100	52	0	22	7

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A21. Concentrations of major ions in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	\circ	Na		X		Mg		Ca		SiO_2	2
Name ¹		km				cms	mg/L	Γ	mg/L	J	mg/L	_	mg/L		mg/L	. 1
						sec	Avg.	SD	Avg.	Ω	Avg.	Q	Avg. S	Ü	Avg.	SD
	IROQUOIS RIVE	ER														
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	23	0	3.1	0.1	26	0	92	1	7.8	0.2
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	25	_	3.2	0.0	26	0	9/	7	8.0	0.2
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	25	_	3.1	0.2	26	_	74	α	7.9	0.2
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	29	1	3.3	0.2	27	_	77	7	7.9	0.3
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	26	1	3.2	0.1	26	_	74	_	7.8	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/12/99	09:20	Comp.	0.64	26	1	3.1	0.0	28	_	78	9	8.6	0.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	25	1	2.9	0.1	25	_	74	1	8.3	0.2
	SUGAR CREEK	K														
SC01	CR 400W bridge, Ind.	0.0	06/13/60	18:30	Grab	0.020	6.6	9.0	1.7	0.0	34	1	81	2	7.3	0.3
SC02	_	4.5	09/13/99	20:10	Grab	0.029	13	0	1.9	0.0	32	_	78	∞	7.2	0.4
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.6	0.5	1.8	0.0	32	_	81	ε	7.5	0.3
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	6.6	0.1	2.1	0.1	34	0	88	1	8.2	0.0
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	9.5	0.0	2.1	0.0	34	0	78	_	8.0	0.2
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	9.0	0.1	1.8	0.1	32	_	79	\mathcal{E}	7.1	0.2
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	9.4	0.5	1.9	0.0	33	7	72	$_{\infty}$	6.7	0.3
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	10	_	2.0	0.0	33	_	71	_	6.4	0.2
SC09		34.4	09/16/99	09:20	Grab	0.162	13	1	2.2	0.1	33	_	71	7	9.9	0.2
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	14	1	2.3	0.2	34	7	73	4	6.7	0.4
	SUGAR CREEK TRIBU	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	06/13/60	19:40	Grab	0.044	8.6	0.1	2.1	0.1	31	0	81	1	9.7	0.1
SCT2	SCT2 Mud Cr. #2. III.	21.2	09/12/99	01:20	Grab	0.012	=	С	2.5	0.1	33	_	29	2	7.0	0.2

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	0	Al	1	As	S	В		Ba		Be	
Name ¹		km				cms	1/gn	Ţ	I/gn	T	1/gn	Γ	µg/L	,	µg/L	,
						sec	Avg	SD	Avg	SD	Avg.	SD	Avg S	SD	Avg	SD
	IROQUOIS RIVER	VER)									
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	2.8	0.2	1.8	0.1	125	α	74	2	< 0.008	0.004
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	1.6	0.1	1.8	0.1	126	ω	75	4	< 0.008	0.001
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	1.7	0.0	1.8	0.1	132	\mathcal{C}	92	0	0.007	0.003
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	1.7	0.1	1.7	0.1	134	0	71	5	< 0.008	0.001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	2.9	0.0	1.7	0.0	121	4	77	7	0.007	0.005
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	1.4	0.1	1.7	0.0	130	_	92	_	< 0.005	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	1.4	0.2	1.8	0.1	114	7	75	7	< 0.008	0.007
	SUGAR CREEK	EK														
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.3	0.2	1.3	0.0	107	7	52	κ	< 0.01	0.00
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	8.0	0.2	1.2	0.0	96	7	51	7	< 0.01	0.01
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	9.0	0.1	1.1	0.0	73	9	45	7	< 0.01	0.00
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	8.0	0.2	0.88	0.03	62	0	50	_	< 0.01	0.00
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	8.0	0.1	0.89	0.05	63	ω	49	_	< 0.01	0.00
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	6.0	0.1	0.74	0.01	67	7	48	7	< 0.01	0.00
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	1:1	0.1	0.83	0.02	75	7	49	7	< 0.01	0.01
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	1.1	0.2	0.92	0.05	79	ω	51	7	< 0.01	0.01
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	1.2	0.2	0.93	0.04	90	_	51	7	< 0.01	0.00
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	1.1	0.2	0.98	0.01	90	ω	51	7	< 0.01	0.00
	SUGAR CREEK TRIBUTARIES	BUTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	1.1	0.3	1.1	0.0	20	9	99	1	< 0.008	0.004
SCT2	SCT2 Mud Cr. #2. III.	21.2	09/15/99	01:20	Grab	0.012	0.5	0.1	1.0	0.0	132	0	33	2	< 0.01	0.01

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	0	Bi		Cd	1	Ce		Co	
Name		km				cms	I/gn	_1	I/gn	Γ	I/gu	Γ	T/gn	. 1
						sec	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER												
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0007	0.0003	0.007	0.002	0.024	0.001	0.046	0.020
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0012	0.0007	900.0	0.001	0.018	0.001	0.041	0.025
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	< 0.002	0.002	0.004	0.000	0.020	0.000	0.048	0.002
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0008	0.0005	0.009	0.002	0.018	0.000	0.061	0.002
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	< 0.002	0.000	0.008	0.001	0.027	0.000	0.041	0.003
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	< 0.002	0.001	0.008	0.000	0.024	0.000	0.018	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	< 0.0004	0.0001	0.007	0.002	0.022	0.001	0.007	0.023
	SUGAR CREEK	K												
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	< 0.0008	0.0001	< 0.002	0.002	0.019	0.001	< 0.002	0.044
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	< 0.0008	9000.0	< 0.002	0.002	0.020	0.001	< 0.002	0.001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.0013	0.0005	< 0.002	0.003	0.011	0.000	< 0.002	0.032
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	< 0.0008	0.0005	0.002	0.001	0.011	0.001	< 0.002	0.005
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	< 0.0008	0.0005	< 0.002	0.002	0.011	0.001	< 0.002	0.010
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	< 0.0008	0.0003	< 0.002	0.004	0.015	0.001	< 0.002	0.013
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	< 0.0008	0.0004	< 0.002	0.003	0.016	0.000	< 0.002	0.016
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	0.0009	0.0010	< 0.002	0.003	0.019	0.000	< 0.002	0.024
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	< 0.0008	0.0001	< 0.002	0.002	0.020	0.001	< 0.002	0.012
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	< 0.0008	0.0001	< 0.002	0.003	0.019	0.001	< 0.002	0.022
	SUGAR CREEK TRIBUTARIES	UTARIE	S											
SCT1	Mud Cr. #1, Ind.	11.7	11.7 09/13/99		Grab	0.044	< 0.0004	0.0005	0.009	0.005	0.014	0.001	< 0.001	0.003
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	< 0.0008	0.0005	< 0.002	0.000	0.011	0.001	< 0.002	0.035

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	O	Cr		Cs	Cu	_	Dy	ý	Er	
Name ¹		km				cms	µg/L	ลิท	µg/L	µg/L	Г	J/gm	T	µg/L	Ţ
						sec	Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER													
IR01	Highway 55 gage, Ind.	0.0	09/13/99		Comp.		< 0.4 0.	0 < 0.002	0.002	0.19	0.01	0.0046	0.0003	0.0034	0.0001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.				0.001	0.15	0.04	0.0036	0.0004	0.0032	0.0005
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	< 0.1 0.0	0.0010	0.0003	0.7	0.0	0.0053	0.0001	0.0032	0.0002
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99		Comp.				0.000	1.5	0.0	0.0048	0.0003	0.0033	0.0007
IR05	CR 100W bridge, Ind.	12.0	09/14/99		Comp.			V	0.0002	1.7	0.0	0.0058	0.0003	0.0038	0.0002
IR06	Highway 41 bridge, Ind.	16.5	09/15/99		Comp.		< 0.1 0.0	0 < 0.0009	0.0003	1.8	0.0	0.0051	0.0003	0.0036	0.0002
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.		< 0.4 0.	1 < 0.002	0.002	0.63	0.02	0.0056	0.0001	0.0029	0.0002
	SUGAR CREEK	K													
SC01	CR 400W bridge, Ind.	0.0	09/13/99		Grab		< 0.3 0.	1 < 0.005	0.001	0.58	0.05	0.0033	0.0003	0.0027	0.0008
SC02	CR 600W bridge, Ind.	4.5	09/13/99		Grab		< 0.3 0.	1 < 0.005	0.001	69.0	0.05	0.0042	0.0003	0.0027	9000.0
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	< 0.3 0.	1 < 0.005	0.001	0.61	90.0	0.0024	0.0005	0.0021	0.0005
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99		Grab		< 0.3 0.	1 < 0.005	0.001	0.67	0.05	0.0023	0.0005	0.0018	0.0001
SC05	CR 3000E bridge, III.	17.7	09/14/99		Grab		< 0.3 0.1	V	0.001	2.5	0.0	0.0018	0.0003	0.0008	0.0006
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab		< 0.3 0.1	V	0.006	1.4	0.0	0.0032	0.0001	0.0023	0.0005
SC07	CR 900N bridge, III.	26.9	09/15/99		Grab		< 0.3 0.1	V	0.001	2.0	0.0	0.0040	0.0002	0.0028	0.0002
SC08	CR 2440E bridge, III.	30.1	09/15/99		Grab		< 0.3 0.	1 < 0.005	0.001	2.0	0.1	0.0041	0.0001	0.0033	0.0004
SC09	Milford, III.	34.4	09/16/99		Grab		< 0.3 0.	1 < 0.005	0.001	3.0	0.0	0.0043	0.0010	0.0026	0.0001
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	< 0.3 0.	1 < 0.005	0.001	2.8	0.1	0.0040	0.0003	0.0026	0.0004
	SUGAR CREEK TRIBUTARIES	UTARIE	S												
SCT1	Mud Cr. #1, Ind.	11.7	11.7 09/13/99	19:40			< 0.4 0.	1 0.002	0.004	< 0.05	0.02	0.0029	0.0002	0.0022	0.0004
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	< 0.3 0.1	1 < 0.005	0.001	1.8	0.0	0.0018	0.0004	0.0013	0.0001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	\circ	Н	Eu	Fe	4)	Cd	þ	Hg		Но	
Name		km				cms	l/gn	,\r	hg/L	Ţ	I/gu	/L	ng/L		ng/L	
						sec	Avg	SD	Avg.	SD	Avg	SD	Avg SD	Avg C)	SD
	IROQUOIS RIVER	/ER														
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0049	0.0001	14	0	0.0072	0.0002	2.2 0	1 0.0012		0.0001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0049	0.0006	8.6	0.3	0.0077	0.0002		_		000
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0009	0.0001	5.8	0.2	0.0109	0.0001		_		003
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0056	0.0013	3.7	0.2	0.0081	0.0006	1.0 0.	0.1 0.0010		0.0001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0013	0.0002	8.1	0.2	0.0089	0.0010		_		001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0018	0.0002	4.1	0.5	0.0055	0.0002		_		001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0046	0.0005	3.4	0.0	0.0056	0.0003		0 0.0012		0.0001
	SUGAR CREEK) K														
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0025	0.0011	12	0	0.0059	0.0000	7.2 0	00000		002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0021	0.0002	13	0	0.0053	0.0003	_	0.0009		001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.0016	0.0008	17	1	0.0038	0.0004	_	0.0 0.000		001
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/14/99	00:90	Grab	0.117	0.0016	0.0002	12	0	0.0026	0.0003	0.5 0	0.0 0.0005	_	0.0001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	0.0016	0.0006	6.1	0.0	0.0029	0.0005	_	_		001
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	0.0033	0.0005	6.1	9.0	0.0045	0.0002	_	0.2 0.000	_	005
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	0.0024	0.0014	3.2	0.4	0.0039	0.0010	_	_		001
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	0.0015	0.0006	4.2	0.0	0.0046	0.0005	0.8	1 0.001	_	001
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	0.0036	0.0003	3.3	0.1	0.0052	0.0001	_	0.0 0.0008	_	001
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	0.0024	0.0005	2.9	0.2	0.0055	0.0004	_	0.2 0.0011	_	00001
	SUGAR CREEK TRIBUTARIES	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0039	0.0002	13	0	0.0039	0.0010		0.2 0.0006		0.0001
SCT2	Mud Cr. #2, III.	21.2			Grab	0.012	0.0007	0.0012	14	0	0.0028	0.0003	2.1			001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	\circ	La				Lu		Mn		Mo		Nd	
Name ¹	_	km				cms	√gμ	Ţ	µg/L	T	T/gm		µg/L		µg/L	Ţ	I/gµ	Ţ
						sec	Avg	SD	Avg	SD	Avg	SD	Avg	$\overline{}$	Avg	SD	Avg	SD
	IROQUOIS RIVER	VER																
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.014	0.000	7.5	0.0	0.0007	0.0000	144	6	5.3	0.0	0.018	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.	0.57	0.012	0.001	7.9	0.3	0.0008	0.0001	119	\mathfrak{S}	5.1	0.1	0.015	0.001
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.013	0.000	7.6	0.1	0.0007	0.0001	128	0	5.2	0.0	0.018	0.000
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.011	0.000	7.7	0.2	0.0008	0.0000	164	11	5.2	0.2	0.013	0.001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.017	0.001	7.0	0.4	0.0010	0.0000	160	\mathcal{S}	5.1	0.0	0.020	0.002
IR06	Highway 41 bridge, Ind.	16.5	09/15/99		Comp.	0.64	0.014	0.000	9.9	0.2	0.0009	0.0001	176	7	5.3	0.1	0.018	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.013	0.000	7.1	0.1	0.0009	0.0000	198	∞	5.5	0.0	0.017	0.001
	SUGAR CREEK	EK																
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.015	0.000	8.9	0.3	0.0004	0.0001	31	1	9.2	0.0	0.016	0.001
SC02	CR 600W bridge, Ind.	4.5	09/13/99		Grab	0.029	0.014	0.001	8.9	0.2	0.0003	0.0000	62	_	7.4	0.0	0.017	0.001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.0079	0.0007	6.1	0.1	0.0003	0.0000	23	_	9.9	0.1	0.010	0.000
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	0.0070	0.0003	5.4	0.2	0.0002	0.0000	24	0	6.3	0.0	0.007	0.001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	0.0070	0.0004	5.6	0.5	< 0.0002	0.0001	27	0	6.7	0.2	0.008	0.000
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	0.010	0.000	5.5	0.3	0.0004	0.0001	26	0	6.4	0.1	0.011	0.002
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	0.010	0.000	5.7	9.0	0.0003	0.0000	56	_	6.9	0.0	0.013	0.001
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	0.014	0.000	5.9	0.1	0.0003	0.0001	61	_	7.0	0.0	0.014	0.001
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	0.013	0.000	5.9	0.4	0.0005	0.0001	89	_	6.9	0.1	0.015	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	0.013	0.001	5.7	0.3	0.0006	0.0000	45	1	6.7	0.1	0.017	0.000
	SUGAR CREEK TRIBUTARIES	3UTARIE	S															
SCT1	Mud Cr. #1, Ind.	11.7	61 66/21/60 11:1	19:40	Grab	0.044	0.0097	0.0000	4.5	0.1	0.0004	0.0001	75	2	8.9	0.1	0.012	0.002
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab		0.0073	0.0001	8.1	0.3	0.0002	0.0001	92	2	6.9	0.0	0.008	0.001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	0	ïZ		Pb		Pr	١	R	Rb	Re	
Name	_	km				cms	ng/L	ت	1/gn	. 1	I/gn	T	I/gn	7	I/gn	Ţ
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	'ER)									
IR01	Highway 55 gage, Ind.	0.0	09/13/99		Comp.	0.59	2.4	0.3 (0.041	0.003	0.0032	0.0001	1.3	0.2	0.013	0.000
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.	0.57	2.0	0.4	0.027	0.005	0.0030	0.0001	1.4	0.2	0.012	0.000
IR03	Brook, Ind.	5.9	09/14/99	_	Comp.	0.67	2.2	0.0	0.029	0.002	0.0039	0.0002	1.3	0.0	0.012	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	2.4	9.0	0.016	0.004	0.0027	0.0005	1.2	0.1	0.013	0.000
IR05	CR 100W bridge, Ind.	12.0	09/14/99		Comp.	0.62	1.8	0.2 (0.034	0.001	0.0042	0.0001	1.2	0.0	0.012	0.000
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	_	Comp.	0.64	1.7	0.2 (0.024	0.002	0.0040	0.0001	1.1	0.0	0.013	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99		Comp.	0.54	1.9	0.2 (0.021	0.005	0.0036	0.0001	0.97	0.11	0.013	0.000
	SUGAR CREEK)K														
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.3	9.0	0.033	0.004	0.0037	0.0002	62.0	0.03	0.0035	0.0002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	2.1	9.0	0.027	0.004	0.0037	0.0001	1.2	0.0	0.016	0.001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	1.3	0.4	0.022	0.004	0.0023	0.0001	1.1	0.0	0.017	0.000
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/14/99	00:90	Grab	0.117	1.6	0.1	0.022	0.001	0.0016	0.0002	0.99	0.03	0.020	0.001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	1.7	0.3	0.012	0.001	0.0017	0.0002	1.0	0.0	0.021	0.000
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	1.9	0.5	0.022	0.001	0.0027	0.0002	0.82	0.02	0.0072	0.0004
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	1.8	9.0	0.022	0.005	0.0028	0.0002	0.76	0.01	0.019	0.000
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	1.4	0.4	0.024	0.003	0.0029	0.0002	0.71	0.01	0.013	0.001
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	1.7	0.2 (0.019	0.003	0.0031	0.0002	99.0	0.01	0.014	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	1.6	0.4	0.021	0.005	0.0033	0.0002	0.62	0.01	0.014	0.001
	SUGAR CREEK TRIBUTARIES	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99		Grab	0.044				800.0	0.0025	0.0002	1.0	0.1	0.016	0.000
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	1.4	0.8	0.021	0.004	0.0018	0.0003	96.0	0.01	0.0069	0.0003

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

	-				c				i		i		i			
Site	Site Location	Dist.	Date	Time	$Type^{z}$	0	Sp	9	Se	1)	Sm		Sr		Ta	
Name	1	km				cms	I/gµ	T	J/gµ	Ţ	I/gµ	,	µg/L	. 1	J/gh	,
						sec	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	VER														
IR01	Highway 55 gage, Ind.	0.0	09/13/99		Comp.	0.59	0.14	0.01	0.2	0.1	0.0042	0.0003	400	27	< 0.0004	0.0002
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.	0.57	0.14	0.00	0.3	0.1	0.0040	0.0001	414	17	< 0.0004	0.0003
IR03	Brook, Ind.	5.9	09/14/99		Comp.	0.67	0.15	0.01	0.31	0.01	0.0039	0.0003	404	5	< 0.001	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.16	0.00	0.3	0.1	0.0031	0.0008	405	4	< 0.0004	0.0003
IR05	CR 100W bridge, Ind.	12.0	09/14/99		Comp.	0.62	0.15	0.00	0.31	0.02	0.0053	0.0005	387	5	< 0.001	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99		Comp.	0.64	0.15	0.00	0.35	0.05	0.0042	0.0000	380	6	< 0.001	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99		Comp.	0.54	0.16	0.00	0.3	0.1	0.0037	0.0007	385	_	< 0.0004	0.0002
	SUGAR CREEK	EK														
SC01	CR 400W bridge, Ind.	0.0	09/13/99		Grab	0.020	0.11	0.01	0.4	0.1	0.0032	0.0007	284	9	< 0.001	0.000
SC02	CR 600W bridge, Ind.	4.5	09/13/99		Grab	0.029	0.12	0.00	0.4	0.1	0.0045	0.0004	211	4	< 0.001	0.001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99		Grab	0.061	0.12	0.01	0.4	0.0	0.0027	0.0001	178	∞	< 0.001	0.001
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	0.10	0.00	0.3	0.1	0.0018	0.0010	169	4	< 0.001	0.000
SC05	CR 3000E bridge, III.	17.7	09/14/99		Grab	0.132	0.12	0.00	0.3	0.1	0.0019	0.0003	166	4	< 0.001	0.001
SC06	CR 2800E bridge, III.	21.4	09/15/99		Grab	0.162	0.098	0.002	0.3	0.0	0.0030	0.0009	173	4	< 0.001	0.000
SC07	CR 900N bridge, III.	26.9	09/15/99		Grab	0.155	0.12	0.00	0.3	0.0	0.0042	0.0003	173	_	< 0.001	0.000
SC08	CR 2440E bridge, III.	30.1	09/15/99		Grab	0.170	0.12	0.00	0.3	0.0	0.0040	0.0009	186	∞	< 0.001	0.001
SC09	Milford, Ill.	34.4	09/16/99		Grab	0.162	0.13	0.00	0.3	0.1	0.0043	0.0008	189	_	< 0.001	0.000
SC10	Above Mud Cr. #3, III.	37.8	09/16/99		Grab	0.159	0.13	0.01	0.2	0.0	0.0040	0.0007	188	2	< 0.001	0.001
	SUGAR CREEK TRIBUTARIES	BUTARIE	\mathbf{S}													
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99			0.044	0.10	0.01	0.3	0.1	0.0026	0.0004	171	3	< 0.0004	0.0003
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	0.098	0.003	0.2	0.0	0.0018	0.0002	207	7	< 0.001	0.000

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	0	Tb	q	Te		T	Th	Ti	IL	
Name	1	km				cms	I/gµ	T	$\mu g/L$	Ţ	µg/L	\L	µg/L	µg/L	T
						sec	Avg	SD	Avg	SD	Avg	SD	Avg SD	Avg	SD
	IROQUOIS RIVER	VER													
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0007	0.0000	0.014	0.003	0.0011	0.0001	_	0.003	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0006	0.0000	0.011	0.005	0.0012	0.0000	_	0.007	0.001
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0007	0.0001	0.012	0.000	0.0010	0.0002	_	0.0045	0.0005
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0006	0.0000	0.015	0.005	0.0013	0.0003	< 0.08 0.09	0.007	0.002
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0009	0.0000	< 0.01	0.001	0.0013	0.0004	_	0.0047	0.0003
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0008	0.0000	< 0.01	0.001	0.0010	0.0000	_	0.0051	0.0008
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0008	0.0001	0.011	0.006	0.0012	0.0003	_	0.006	0.003
	SUGAR CREEK	\mathbf{K}													
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	900000	0.0001	0.012	0.004	0.0016	0.0001		0.0075	0.0003
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0006	0.0001	0.017	0.001	0.0010	0.0001		0.011	0.001
E02S 141	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.0004	0.0001	0.014	0.005	0.0010	0.0001	< 0.09 0.31	0.019	0.003
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	0.0002	0.0000	0.014	0.002	0.0006	0.0001		0.018	0.001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	0.0003	0.0001	0.008	0.002	0.0005	0.0002		0.020	0.001
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	0.0005	0.0001	0.013	0.001	0.0008	0.0001		0.014	0.001
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	0.0005	0.0001	0.011	0.005	0.0006	0.0002		0.014	0.001
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	9000.0	0.0001	< 0.008	0.001	0.0011	9000.0		0.012	0.002
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	0.0005	0.0000	0.011	0.005	0.0008	0.0003		0.0083	0.0005
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	0.0006	0.0001	0.018	0.005	0.0011	0.0005	< 0.09 0.26	0.0077	0.0004
	SUGAR CREEK TRIBUTARIES	SUTARIE	S												
SCT1	Mud Cr. #1, Ind.	11.7	11.7 09/13/99 19:	19:40	Grab		0.0004	0.0000	0.017	0.001	0.0011	0.0003		0.019	0.003
SCT2	Mud Cr. #2, III.	21.2	09/15/99 01:20	01:20	Grab	0.012	0.0003	0.0000	0.011	0.003	0.0012	0.0005	< 0.09 0.37	0.016	0.001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	o	Tm	n	U		^		W			
Name	1	km				cms	Ι/σΠ	Τ.	Πσ/Γ		. Ι/σΠ	Ļ	<u> </u>	Ţ	<u> </u>	7
						sec	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	/ER)))))	
IR01	Highway 55 gage, Ind.	0.0	09/13/99		Comp.	0.59	0.0006	0.0000	1.2	0.0	1.2	0.2	0.008	0.001	0.043	0.007
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.	0.57	0.0003	0.0000	1.1	0.0	1.1	0.1	0.005	0.001	0.039	0.005
IR03	Brook, Ind.	5.9	09/14/99	_	Comp.	0.67	0.0005	0.0001	1.2	0.0	1.1	0.0	0.020	0.000	0.044	0.004
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0006	0.0000	1.2	0.0	1.2	0.1	0.007	0.002	0.043	900.0
IR05	CR 100W bridge, Ind.	12.0	09/14/99		Comp.	0.62	0.0007	0.0001	1.2	0.0	1.1	0.1	0.005	0.002	0.049	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	_	Comp.	0.64	0.0007	0.0002	1.2	0.0	1.2	0.1	0.004	0.000	0.046	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99		Comp.	0.54	0.0006	0.0001	1.3	0.0	1.3	0.1	0.008	0.000	0.044	0.007
	SUGAR CREEK	3 K														
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0003	_	3.3	0.0	0.48	80.0	0.003	0.000	0.043	0.002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0003	_	3.3	0.1	0.41	0.04	0.009	0.002	0.037	0.001
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	< 0.0002	0.0001	3.0	0.1	0.19	0.01	0.002	0.001	0.025	0.001
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/14/99	00:90	Grab	0.117	< 0.0002	_	2.9	0.1	< 0.1	0.04	< 0.001	0.001	0.023	0.001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	< 0.0002	_	3.3	0.0	< 0.1	0.07	0.003	0.001	0.015	0.000
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	0.0003	_	2.9	0.1	< 0.1	0.01	0.004	0.001	0.032	0.000
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	0.0004	_	2.8	0.1	0.27	0.03	0.002	0.001	0.037	0.002
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	0.0003	_	2.7	0.1	0.36	0.04	0.004	0.000	0.045	0.000
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	0.0004	_	2.6	0.1	0.29	0.04	0.007	0.002	0.039	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	0.0004	_	2.5	0.1	0.37	0.03	0.005	0.001	0.042	0.000
	SUGAR CREEK TRIBUTARIES	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99		Grab	0.044	0.0003	0.0000	2.9	0.1	0.2	0.1	0.004	0.001	0.029	0.005
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	< 0.0002		1.2	0.0	0.12	0.04	0.005	0.000	0.019	0.001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	ð		Yb	Zn	u	Z	Zr
Name ¹		km				cms	З'n	µg/L	µg/L	T	hg/L	T
						sec	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	VER										
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0038	0.0003	9.0	0.3	0.081	0.002
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0038	0.0004	1.9	0.3	0.086	0.003
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0038	0.0005	0.8	0.0	0.083	0.004
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0038	0.0005	0.5	0.1	0.071	0.001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0050	0.0002	1.3	0.2	0.080	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0043	0.0003	1.2	0.1	0.077	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0043	0.0003	1.7	0.3	0.084	0.005
	SUGAR CREEK	EK										
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0023	0.0003	9.0	0.0	0.063	0.005
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0026	0.0000	0.5	0.1	0.034	0.004
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	0.0020	0.0003	0.5	0.1	0.036	0.005
SC04	Stateline Rd. bridge, IllInd.	14.0	09/14/99	00:90	Grab	0.117	0.0016	0.0001	6.0	0.0	0.029	0.001
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	0.0011	0.0004	0.4	0.0	0.015	0.001
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	0.0022	0.0004	6.0	0.0	0.028	0.003
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	0.0024	0.0009	4. 4.	0.0	0.029	0.006
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	0.0027	0.0003	9.0	0.0	0.034	0.000
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.0032	0.0003	1.4	0.0	0.034	0.003
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	0.0031	0.0001	0.4	0.0	0.035	0.004
	SUGAR CREEK TRII	TRIBUTARIES	S									
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0022	0.0004	8.0	0.2	0.029	0.003
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	0.0011	0.0004	1.1	0.0	0.037	0.002
												ĺ

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A23. Field measurements for samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	O	Hd	Temperature	Specific	Dissolved Oxygen
Name	1	km				cms		O°.	Conductance	mg/L
						sec			μS/cm	
	IROQUOIS RIVE	ER								
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	8.10	21.9	099	8.3
IR02	Highway 16 bridge, Ind.	2.0	09/13/99		Comp.	0.57	8.00	19.0	683	5.7
IR03	Brook, Ind.	5.9	09/14/99		Comp.	0.67	7.92	18.7	929	5.3
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99		Comp.	0.63	7.95	20.8	969	6.1
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	7.90	19.1	969	0.9
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	7.92	17.6	<i>LL</i> 9	5.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	7.92	18.9	691	na
	SUGAR CREEK	K								
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	8.11	20.0	909	8.2
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	7.62	17.9	655	5.9
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	8.24	20.3	635	10.9
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/14/99	00:90	Grab	0.117	8.20	15.6	673	7.7
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	8.31	24.3	646	10.8
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	8.14	15.5	999	8.8
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	8.27	19.3	632	11.4
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	8.23	17.4	636	9.1
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	8.17	15.3	645	7.4
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	8.24	16.6	643	8.1
	SUGAR CREEK TRIBU	UTARIE	S							
SCT1	SCT1 Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	8.16	20.7	649	7.5
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	na	na	na	na

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A24. Bacterial cell counts and chlorophyll-a concentrations in samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	O	Bacterial Cell	Chlorophyll-a
Name		km				cms	Counts	concentrations
						sec	millions/mL	ng/L
	IROQUOIS RIVER	GR						
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	1.89	8.55
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	1.82	4.02
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.32	4.50
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	1.02	5.31
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.24	09.9
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.87	7.88
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	1.08	4.98
	SUGAR CREEK	>						
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.88	2.43
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	1.60	3.96
SC03	Highway 71 bridge, Ind.	8.6	09/13/99	19:10	Grab	0.061	3.10	4.88
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/14/99	00:90	Grab	0.117	2.22	3.74
SC05	CR 3000E bridge, III.	17.7	09/14/99	15:00	Grab	0.132	2.52	1.70
SC06	CR 2800E bridge, III.	21.4	09/15/99	00:10	Grab	0.162	2.00	4.18
SC07	CR 900N bridge, III.	26.9	09/15/99	13:30	Grab	0.155	3.24	3.27
SC08	CR 2440E bridge, III.	30.1	09/15/99	23:00	Grab	0.170	2.07	4.38
SC09	Milford, III.	34.4	09/16/99	09:20	Grab	0.162	1.16	3.69
SC10	Above Mud Cr. #3, III.	37.8	09/16/99	16:50	Grab	0.159	2.22	1.82
	SUGAR CREEK TRIBUTARIES	TARIE	\mathbf{S}					
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	1.80	1.62
SCT2	Mud Cr. #2, III.	21.2	09/15/99	01:20	Grab	0.012	1.08	19.7

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A25. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of May 2000.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	\circ	NO_3		NO_2	2	1	_₹	Kjeldahl N	N_2O	
Name ¹	-	km				cms	mg N/L	د	mg N/L	7T	mg N/L	VL	mg N/L	mg N/L	1
						N	Median	AD	Median	MAD	Median	MAD	Value	Avg	SD
	IROQUOIS RIVER	S RIVER													
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	7.31	90.0	0.104	0.002	0.068	0.005	0.64	0.00143 0.0	9000000
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	7.36	90.0	0.104	0.001	0.079	0.006	na	na	na
IR 02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8	9.73	0.03	0.099	0.001	0.129	0.007	0.58	0.00169 0.0	0.00000
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8	9.36	0.34	0.102	0.002	0.114	0.008	na	na	na
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	10.1	0.3	0.109	0.002	0.132	0.008	0.59	0.00182 0.0	0.00007
IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0	10.3	9.0	0.110	0.002	0.134	0.013	na	0.00165 0.0	0.00003
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	13.6	9.0	0.113	0.001	0.183	0.013	99.0	0.00226 0.0	0.00015
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	11.2	0.2	0.097	0.004	0.173	0.009	na	0.00213 0.0	0.00011
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	13.8	0.0	0.119	0.003	0.129	0.009	0.56	0.00213 0.0	900000
. IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	13.7	0.0	0.116	0.004	0.153	0.002	na	0.00218 0.0	9000000
46 IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	13.9	0.2	0.137	0.002	0.113	0.010	0.77	0.00237 0.0	0.00004
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	14.3	0.1	0.132	0.003	0.118	0.014	na	0.00244 0.0	0.00007
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	13.9	0.0	0.141	0.001	0.121	0.019	0.73	0.00231 0.0	900000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	13.8	0.2	0.138	0.001	0.110	0.012	na	0.00231 0.0	9000000
	SUGAR CREEK	REEK													
SC01	CR 400W bridge, Ind.	0.0	00/80/90	13:20	Grab	0.39	11.0	0.2	090.0	0.001	0.016	0.004	0.34	0.000087 0.0	0.00016
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	10.8	0.2	0.070	0.001	0.036	0.006	0.29	0.00161 0.0	0.00005
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	10.5	0.0	0.080	0.002	0.047	0.002	0.33	0.00118 0.0	0.00002
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	10.2	0.1	0.079	0.001	0.021	0.007	0.35	0.00104 0.0	0.00005
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	6.87	0.01	0.080	0.001	0.022	0.005	0.30	0.00084 0.0	0.00005
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	6.77	0.03	0.076	0.001	0.033	900.0	0.29	0.00099	0.00010
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	9.70	0.01	0.074	0.001	0.037	0.009	0.33	0.00108 0.	0.00010
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	9.81	90.0	0.082	0.001	0.040	0.012	0.36	0.00119 0.	0.00004
SC09	Milford, III.	34.4	02/06/00	11:10	Grab	1.95	89.6	90.0	0.080	0.000	0.041	0.007	0.33	0.00101 0.0	0.00007
SC10	Above Mud Cr. #3, III.	37.8	02/06/00	17:15	Grab	1.92	9.10	90.0	0.082	0.005	0.094	0.016	0.45	0.00107 0.0	0.00008
	SUGAR CREEK 7	TRIBUTARIES	ARIES												
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	9.84	0.12	0.068	0.001	0.019	0.003	0.31	0.00098	0.00005
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	13.0	0.0	0.080	0.001	0.028	0.018	0.34	0.00123 0.0	0.00004
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	12.7	1.5	0.175	0.001	0.125	0.010	0.46	0.00241 0.0	9000000
1	¹ More complete explanations of these are found in table 1	are form	d in table 1												

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A25. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); <, less than; na, not available]

3 caroon, n	5 car con, mg/2, minigrams per mer, mixe, m	and an analysis	ימנה מה ימנ	1011	ascern', r	, ,(0/,		, 114, 1101	Laranim th				popuousing
		1 7:57	4	Ė	7	(2		¢		4	-	Suspended
Site	Site Location	Dist.	Date	Time	1 ype	<u>ح</u>	PO_4	4	Ъ		DOC	ာ	Sediment
Name		km				cms	mg P/L	J/C	mg/L	Ţ	mg C/L	7/L	mg/L
							Median	MAD	Avg	SD	Avg	SD	Value
	IROQUO	IS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.024	0.000	0.037	0.000	7.47	0.35	35
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.023	0.002	0.037	0.001	6.99	0.39	27
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8	0.028	0.003	0.046	0.000	6.50	0.45	51
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8	0.024	0.003	0.041	0.003	5.87	0.10	27
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	0.046	0.003	0.061	0.001	00.9	0.17	33
IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0	0.042	0.004	0.058	0.002	5.92	0.03	16
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.044	900.0	0.062	0.000	5.69	0.07	61
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.035	0.002	0.058	0.002			58
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.044	0.005	0.074	0.002	5.44	0.01	89
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.042	0.002	990.0	0.000	5.48	0.11	64
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.047	0.000	0.068	0.001	5.52	0.01	53
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.040	0.000	0.065	0.001	5.45	0.03	35
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.043	0.004	0.067	0.001	5.92	0.08	51
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.036	0.004	0.070	0.002	5.64	0.04	51
	SUGAR	CREEK											
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39	< 0.006	0.003	0.007	0.001	2.76	80.0	9
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	< 0.006	0.004	0.017	0.001	2.91	0.24	11
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	< 0.006	0.002	0.010	0.001	2.94	0.13	7
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	< 0.006	0.005	0.012	0.002	2.86	0.03	7
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	< 0.006	0.001	< 0.004	0.002	3.71	0.11	6
SC06		21.4	02/08/00	22:40	Grab	1.40	< 0.006	0.004	< 0.004	0.002	3.02	0.13	18
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	< 0.006	0.003	< 0.004	0.003	3.43	90.0	41
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	< 0.006	0.004	< 0.004	0.001	3.28	0.03	27
SC09		34.4	02/06/00	11:10	Grab	1.95	< 0.006	0.001	0.023	0.001	3.16	0.29	31
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	0.010	0.001	0.030	0.000	3.53	0.07	120
	SUGAR CREEK	K TRIBUT	ARIES										
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	< 0.006	0.004	0.000	0.002	2.95	0.03	9
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	< 0.006	0.003	< 0.004	0.001	3.05	0.02	< > 5
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	< 0.006	0.001	0.007	0.001	3.64	0.04	18

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A26. Concentrations of major ions in samples collected on the Lagrangian trip of May 2000.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	\circ	C		SO_4	$HCO_3 + CO_3$	+ CO ₃	Br	<u>.</u>
Name ¹		km				cms	mg/L		mg/L	mg C/L	C/L	µg/L	T
						,	Avg S	D A	Avg SD	A	SD	Avg	SD
	IROQUOIS RIVER	RIVER)		ı	,		1	
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	34 n	la 8	84 na	49.2	0.5	10	1
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	32 n	1a 7	'8 na	48.2	0.3	9.2	8.0
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	32 n	na 7	'1 na	46.8	0.3	6.7	0.7
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab	19.8		na 7	73 na	47.2	1.2	9.5	0.7
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.	17.0	32	1 6	0 69	46.3	0.1	9.2	1.1
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0		na 6	69 na	46.6	0.5	7.5	8.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5		na 5	59 na	43.5	0.1	7.4	0.2
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	32 n	na 5	58 na	43	na	8.8	8.0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4		na 5	57 na	45.0	0.7	13	0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	31	0 5	58 0	43.7	0.2	1	_
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	34 n	na 5	57 na	44.5	0.1	12	_
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	33 n	na 5	57 na	44.9	0.0	11	-
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	32 n	na 5	54 na	42.4	0.4	1	_
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	32 n	na 5	5 na	43.0	0.3	6.6	1.0
	SUGAR CI	CREEK											
SC01	CR 400W bridge, Ind.	0.0	00/80/90	13:20	Grab	0.39	24	1 6	0 09	51.6	9.0	11	1
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50		na 6	63 na	52.7	0.1	13	7
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56		na 6	67 na	51.4	0.0	9.1	1.0
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06	26 n	na 7	78 na	48.6	1.0	8.6	1.2
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14		na 8	80 na	49.4	0.2	11	П
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	25 n	na 8	80 na	50.2	0.0	10	_
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	25	0 7	72 0	46.6	1.0	11	_
SC08	CR 2440E bridge, III.	30.1	02/09/00	08:45	Grab	2.06	25 n	na 6	68 na	47.8	0.7	12	0
SC09	Milford, III.	34.4	02/06/00	11:10	Grab	1.95	25 n	na 6	69 na	48.1	1.4	11	0
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92		na 6	65 na	46.7	0.7	11	0
	SUGAR CREEK T	TRIBUT	ARIES										
SCT1	Mud Cr. #1, Ind.	11.7	00/80/90	11:30	Grab	0.38			ū	49.5	0.2	11	0
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	25	2 5	54 2	41.7	0.2	8.5	0.4
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	26 n	na 3	39 na	50.0	0.7	7.6	0.1
	f -1-1- 1 : 1 : 1 :1-1- 1												

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A26. Concentrations of major ions in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Highway 55 gage, Ind. 0.0 05/01/00 14:20 Comp. Highway 55 gage, Ind. 0.0 05/01/00 14:20 Grab Highway 16 bridge, Ind. 2.0 05/09/00 21:30 Grab Brook, Ind. 2.0 05/09/00 21:30 Grab Brook, Ind. 2.0 05/09/00 21:30 Grab Brook, Ind. 5.9 05/09/00 03:30 Grab Meridian Rd. bridge, Ind. 12.0 05/10/00 08:40 Grab Meridian Rd. bridge, Ind. 12.0 05/10/00 08:40 Grab CR 100W bridge, Ind. 12.0 05/10/00 18:00 Grab Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Grab Highway 41 bridge, Ind. 16.5 05/11/00 08:00 Grab Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab CR 600W bridge, Ind. 21.1 05/11/00 00:30 Grab CR 500E bridge, Ind. 4.5 05/08/00 13:45 Grab CR 300E bridge, Ind. 4.5 05/08/00 15:30 Grab CR 240E bridge, III. 17.7 05/08/00 15:30 Grab CR 240E bridge, III. 31.1 37.8 05/09/00 17:15 Grab CR 240E bridge, III. 37.8 05/09/00 17:15 Grab Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab Mud Cr. #1, Ind. 11.0 06:10 Grab Mud Cr. #2, III. 26.5 06/01/00 06:10 Grab Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab Mud Cr. #3, III. 28.5 05/01/00 06:10 Grab Man And Cr. #3, III. 28.5 05/01/00 06:10 Man And Cr. #3, IIII. 28.5 05/01/00 Man And Cr. #3, III. 28.5 05/01/00	Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	o	Na	-	K		Mg	50	Ca		SiO_2	2
Highway 55 gage, Ind. Highway 55 gage, Ind. Highway 55 gage, Ind. Highway 55 gage, Ind. Highway 16 bridge, Ind. Brook, Ind. Brook	Name		km				cms	mg/	T G	mg/L	L Co	mg/L	T G	_		mg/L	L
Highway 55 gage, Ind. Highway 55 gage, Ind. Highway 55 gage, Ind. Highway 16 bridge, Ind. 2.0 05/09/00 21:30 Grab 5.7 11 Highway 16 bridge, Ind. 2.0 05/09/00 21:30 Grab 19.8 11 Brook, Ind. Brook, Ind. Brook, Ind. S.9 05/09/00 03:30 Grab 17.0 12 Brook, Ind. Brook, Ind. S.9 05/09/00 03:30 Grab 17.0 12 Meridian Rd. bridge, Ind. 12.0 05/10/00 08:40 Grab 19.5 11 Highway 41 bridge, Ind. 12.0 05/10/00 11:20 Grab 19.5 11 Highway 41 bridge, Ind. 12.0 05/10/00 11:20 Grab 19.5 11 Highway 41 bridge, Ind. 12.1 05/11/00 00:30 Grab 19.5 11 Highway 41 bridge, Ind. SUGAR CRREK CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.5 11 Highway 41 bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 200E bridge, III. 21.4 05/08/00 13:20 Grab 1.06 8.4 0.50 CR 200E bridge, III. 22.9 05/01/00 05:35 Grab 1.92 8.0 0. CR 2440E bridge, III. 30.1 05/09/00 13:10 Grab 1.92 8.0 0. CR 240E bridge, III. 30.1 05/09/00 13:10 Grab 1.92 8.0 0. CR 240E bridge, III. 30.1 05/09/00 13:10 Grab 0.33 6.7 0. Mud Cr. #1, Ind. 28.5 05/01/00 06:10 Grab 0.33 6.7 0. Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab 0.33 6.7 0. Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab 0.33 6.7 0.		ROOTOORI	SRIVER					A va	J.C	ac V	J.C	A A	70	as V		as V	J.
Highway 55 gage, Ind. Highway 16 bridge, Ind. 2.0 05/09/00 21:30 Grab 5.7 11 Highway 16 bridge, Ind. 2.0 05/09/00 21:30 Grab 19.8 11 Brook, Ind. Brook, Ind. Brook, Ind. Solvand 19:30 Grab 19.8 11 Brook, Ind. Brook, Ind. Meridian Rd. bridge, Ind. Solvand 19:30 Grab 17.0 12 Meridian Rd. bridge, Ind. Highway 41 bridge, Ind. Solvand Co. Fairgrounds, Ind. Solvand Co. Fairgrounds, Ind. Solvand Co. Fairgrounds, Ind. Solvand Co. Fairgrounds, Ind. Solvand 19:30 Grab 19:5 11 Newton Co. Fairgrounds, Ind. Solvand Co. Fairgrounds, Ind. Solvands, Ind.	IR01		0.0	05/01/00	14:20	Comp.	5.7	12	0	2.1	0.3	27	4	87	3	6.1	0.1
Highway 16 bridge, Ind. Highway 16 bridge, Ind. Evo 05/09/00 21:30 Grab Highway 16 bridge, Ind. Evo 05/09/00 03:30 Grab Brook, Ind. Evo 05/09/00 03:30 Grab Brook, Ind. Evo 05/09/00 03:30 Grab Heighway 16 bridge, Ind. Evo 120 O5/10/00 08:40 Grab Evo 19:5 11 Meridian Rd. bridge, Ind. Evo 120 O5/10/00 08:40 Grab Evo 19:5 11 Highway 41 bridge, Ind. Evo 120 O5/10/00 11:20 Grab Highway 41 bridge, Ind. Evo 120 O5/10/00 11:20 Grab Evo 19:5 11 Highway 41 bridge, Ind. Evo 100 Ovide Ovide Evo 10:20 O	IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	11	0	2.0	0.2	25	\mathcal{E}	85	7	5.9	0.1
Highway 16 bridge, Ind. Brook, Ind. S.9 05/09/00 03:30 Comp. 17:0 12 Meridian Rd. bridge, Ind. 9.4 05/10/00 08:40 Comp. 19:5 11 Meridian Rd. bridge, Ind. 12.0 05/10/00 11:20 Comp. 17:4 11 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Comp. 17:4 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Comp. 19:5 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Comp. 19:5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Crab 19:3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19:3 11 SUGAR CREEK CR 600W bridge, Ind. 4.5 05/08/00 13:20 Grab 0.50 8:0 0. CR 8300E bridge, III. 1nd. 14.0 05/08/00 13:35 Grab 0.50 7:4 0. CR 2800E bridge, III. 17:7 05/08/00 19:15 Grab 1.06 8:4 0. CR 2800E bridge, III. 17:7 05/08/00 19:15 Grab 1.95 8:0 0. CR 2440E bridge, III. 30.1 05/08/00 17:15 Grab 1.95 8:0 0. Above Mud Cr. #3, III. 31.8 05/09/00 17:15 Grab 0.38 9:6 0. Mud Cr. #1, Ind. 11.7 05/08/00 17:15 Grab 0.38 9:6 0. Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab 0.33 6:7 0. Unnamed trib, III. 28.5 05/01/00 06:10 Grab 0.33 6:7 0. Unnamed trib, III.	IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8	11	0	2.1	9.0	22	_	84	_	6.5	0.1
Brook, Ind. 5.9 05/09/00 03:30 Comp. 17.0 12 Brook, Ind. 5.9 05/09/00 03:30 Grab 17.0 12 Meridian Rd. bridge, Ind. 9.4 05/10/00 08:40 Grab 19.5 11 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Grab 17.4 11 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Grab 17.4 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Grab 19.5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 08:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 08:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 08:30 Grab 19.3 11 CR 600W bridge, Ind. 21.1 05/11/00 08:30 Grab 19.3 11 CR 600W bridge, Ind. 14.5 05/08/00 19:15	IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8	11	0	2.5	0.4	35	1	8	7	6.5	0.1
Brook, Ind. Meridian Rd. bridge, Ind. Meridian Rd. bridge, Ind. Meridian Rd. bridge, Ind. Meridian Rd. bridge, Ind. CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 05/10/00 11:20 Comp. 17.4 11 CR 100W bridge, Ind. 12.0 05/11/00 11:20 Grab 17.4 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Comp. 19.5 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Grab 19.5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 CR 400W bridge, Ind. 9.8 05/08/00 13:45 Grab 0.56 7.2 0. Stateline Rd. bridge, III. 17.7 05/08/00 15:30 Grab 1.06 8.4 0. CR 2800E bridge, III. 21.4 05/08/00 15:30 Grab 1.06 8.4 0. CR 2800E bridge, III. 21.4 05/08/00 15:30 Grab 1.06 8.2 0. Milford, III. 30.1 05/09/00 05:35 Grab 1.95 8.2 0. Above Mud Cr. #3, III. 31.8 37.8 05/09/00 17:15 Grab 1.95 8.0 0. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 28.5 05/01/00 06:10 Grab 0.33 6.7 0. Umamed trib., III. 28.5 05/01/00 06:10 Grab 0.33 6.7 0.	IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	12	0	2.7	0.2	31	5	82	_	6.7	0.2
Meridian Rd. bridge, Ind. 94 05/10/00 08:40 Comp. 19.5 11 Meridian Rd. bridge, Ind. 12.0 05/10/00 08:40 Grab 19.5 10 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Comp. 17.4 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Comp. 19.5 11 Highway 41 bridge, Ind. 21.1 05/11/00 18:00 Comp. 19.5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 06:30 Comp. 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 06:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 06:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 06:30 Grab 19.3 17.4 0. CR 600W bridge, Ind. 4.5 05/08/00 13:45 Grab 1.06 11.4 05/08/00 11.4	IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0	12	0	5.6	0.2	53	\mathcal{E}	85	0	5.4	0.1
Meridian Rd. bridge, Ind. 9.4 05/10/00 08:40 Grab 19.5 10 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Comp. 17.4 11 CR 100W bridge, Ind. 12.0 05/10/00 11:20 Grab 17.4 11 Highway 41 bridge, Ind. 16.5 05/11/00 18:00 Grab 19.5 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 Newton Co. Fairgrounds, Ind. 21.1 05/08/00 13:20 Grab 19.3 11 CR 400W bridge, Ind. 20.0 05/08/00 13:45 Grab 0.56 7.2 0.5 CR 2400E bridge, Ill. 17.7 05/08/00 12:30 Grab 1.93 1.4 0.5 <td>IR04</td> <td>Meridian Rd. bridge, Ind.</td> <td>9.4</td> <td>05/10/00</td> <td>08:40</td> <td>Comp.</td> <td>19.5</td> <td>11</td> <td>0</td> <td>2.5</td> <td>0.2</td> <td>27</td> <td>7</td> <td>81</td> <td>_</td> <td>0.9</td> <td>0.1</td>	IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	11	0	2.5	0.2	27	7	81	_	0.9	0.1
CR 100W bridge, Ind. CR 100W bridge, Ind. L2.0 05/10/00 11:20 Grab 17.4 11 Highway 41 bridge, Ind. L6.5 05/11/00 18:00 Comp. 19.5 11 Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 3000E bridge, Ind. CR 240E bridge, Ind. CR 240E bridge, Ind. SUGAR CREEK CR 240E bridge, Ind. CR 250W bridge, Ind. SUGAR CREEK CR 260W bridge, Ind. SUGAR CREEK CR 3000E bridge, Ind. CR 250W bridge, Ind. CR 250W bridge, Ind. SUGAR CREEK CR 3000E bridge, Ind. CR 250W bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. SUGAR CREEK CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 260W bridge, Ind. CR 260W bridge, Ind. CR 260W bridge, Ind. CR 260W bridge, Ind. CR 3000E bridge, Ind. CR 260W bri	IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	10	0	2.2	0.4	23	7	6/	_	6.7	0.1
CR 100W bridge, Ind. Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. Stateline Rd. bridge, Ind. Stateline Rd. bridge, Ind. CR 3000E bridge, Ind. CR 2800E bridge, III. CR 2400E bridge, III. CR 2600W bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600 15:30 Grab CR 3000E bridge, III. CR 2600W bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600E bridge, III. CR 2600 15:30 Grab CR 2600E bridge, III. CR 2600E bridge, III. CR 2600W bridge, III. CR 2600E bridge, III. CR 260E bridge, III. CR 260E bridge, III. CR	IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	11	0	2.1	0.0	26	0	82	_	7.3	0.1
Highway 41 bridge, Ind. Newton Co. Fairgrounds, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. CR 600W bridge, Ind. CR 500W bridge, Ind. CR 500W bridge, Ind. CR 500W bridge, Ind. CR 2800E bridge, III. CR 260W bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 260W bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 260W bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 260W bridge, III. CR 260W bridge, III. CR 260W bridge, III. CR 260W bridge, III. CR 280W bridge, III. CR 260W bridge, III. CR 270W bridge, III. CR 260W bridge, III. CR 270W bridge, III. CR 270W bridge, III. CR 260W bridge, III. CR 270W bri	IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	11	0	2.1	0.1	25	0	83	_	7.2	0.1
Highway 41 bridge, Ind. Newton Co. Fairgrounds, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. SUGAR CREEK CR 600W bridge, Ind. Stateline Rd. bridge, III. CR 21.4 05/08/00 15:30 Grab 19.3 11 CR 2800E bridge, III. CR 2800E bridge, III. CR 240E bridge, III. CR 2600W bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600W bridge, III. CR 3000E bridge, III. CR 2600 05/08/00 15:30 Grab 1.06 8.4 0. CR 2800E bridge, III. CR 2600 05/08/00 15:30 Grab 1.06 8.4 0. CR 2800E bridge, III. CR 2600 05/08/00 15:15 Grab 1.05 8.2 0. CR 240E bridge, III. 30.1 05/08/00 05:35 Grab 1.95 8.2 0. Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #3, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. Chap na 6.8 0.	IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	1	0	2.0	0.0	25	_	83	_	7.3	0.1
Newton Co. Fairgrounds, Ind. Newton Co. Fairgrounds, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. CR 400W bridge, Ind. Stateline Rd. bridge, Ill. CR 2800E bridge,	IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	11	0	2.0	0.0	25	0	82	7	7.2	0.1
Newton Co. Fairgrounds, Ind. 21.1 05/11/00 00:30 Grab 19.3 11 SUGAR CREEK CR 400W bridge, Ind. 0.0 05/08/00 13:20 Grab 0.50 7.4 CR 600W bridge, Ind. 4.5 05/08/00 13:45 Grab 0.50 8.0 Highway 71 bridge, Ind. 9.8 05/08/00 10:15 Grab 0.50 8.2 Stateline Rd. bridge, III. 17.7 05/08/00 15:30 Grab 1.06 8.4 CR 3000E bridge, III. 17.7 05/08/00 19:15 Grab 1.40 8.2 CR 2800E bridge, III. 21.4 05/08/00 22:40 Grab 1.40 8.2 CR 2800E bridge, III. 30.1 05/09/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 17:15 Grab 1.92 8.0 Milford, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK	IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	11	0	2.2	0.0	7	0	80	_	7.3	0.1
SUGAR CREEK CR 400W bridge, Ind. 0.0 05/08/00 13:20 Grab 0.39 7.4 CR 600W bridge, Ind. 4.5 05/08/00 13:45 Grab 0.50 8.0 Highway 71 bridge, Ind. 9.8 05/08/00 10:15 Grab 0.56 7.2 Stateline Rd. bridge, III. 14.0 05/08/00 15:30 Grab 1.16 8.4 CR 3000E bridge, III. 17.7 05/08/00 19:15 Grab 1.40 8.2 CR 2800E bridge, III. 21.4 05/08/00 22:40 Grab 1.40 8.2 CR 2900N bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 11:10 Grab 1.92 8.0 Milford, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 21:2 05/01/00 Grab 0.33 67 <tr< td=""><td>IR07</td><td>Newton Co. Fairgrounds, Ind.</td><td>21.1</td><td>05/11/00</td><td>00:30</td><td>Grab</td><td>19.3</td><td>11</td><td>0</td><td>2.3</td><td>0.1</td><td>25</td><td>0</td><td>80</td><td>2</td><td>7.4</td><td>0.3</td></tr<>	IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	11	0	2.3	0.1	25	0	80	2	7.4	0.3
CR 400W bridge, Ind. CR 600W bridge, Ind. 4.5 05/08/00 13:20 Grab 0.39 7.4 CR 600W bridge, Ind. 4.5 05/08/00 13:45 Grab 0.50 8.0 Highway 71 bridge, Ind. 9.8 05/08/00 10:15 Grab 0.56 7.2 Stateline Rd. bridge, III. 17.7 05/08/00 15:30 Grab 1.06 8.4 CR 2800E bridge, III. 21.4 05/08/00 19:15 Grab 1.14 8.3 CR 2800E bridge, III. 22.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 1.95 8.2 Above Mud Cr. #3, III. 31.4 05/09/00 11:10 Grab 1.95 8.2 Mud Cr. #1, Ind. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 28.5 05/01/00 06:10 Grab 0.38 9.6 Unnamed trib., III. 28.5 05/01/00 06:10 Grab na 6.8			CREEK														
CR 600W bridge, Ind. 4.5 05/08/00 13:45 Grab 0.50 8.0 Highway 71 bridge, Ind. 9.8 05/08/00 10:15 Grab 0.56 7.2 Stateline Rd. bridge, III. 17.7 05/08/00 15:30 Grab 1.06 8.4 CR 2300E bridge, III. 21.4 05/08/00 19:15 Grab 1.14 8.3 CR 240E bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 1.95 8.2 Milford, III. 31.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 31.4 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab na 6.8	SC01	CR 400W bridge, Ind.	0.0	02/08/00	13:20	Grab	0.39	7.4	0.1	0.75	0.05	56	2	85	1	7.1	0.0
Highway 71 bridge, Ind. 9.8 05/08/00 10:15 Grab 0.56 7.2 Stateline Rd. bridge, III.—Ind. 14.0 05/08/00 15:30 Grab 1.06 8.4 CR 3000E bridge, III.—17.7 05/08/00 19:15 Grab 1.14 8.3 CR 2800E bridge, III.—21.4 05/08/00 22:40 Grab 1.40 8.2 CR 900N bridge, III.—26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III.—30.1 05/09/00 08:45 Grab 1.95 8.2 Milford, III.—34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III.—37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind.—11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III.—28.5 05/01/00 06:10 Grab na 6.8	SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	8.0	0.2	0.81	0.04	29	_	88	_	7.1	0.2
Stateline Rd. bridge, IIIInd. 14.0 05/08/00 15:30 Grab 1.06 8.4 CR 3000E bridge, III. 17.7 05/08/00 19:15 Grab 1.14 8.3 CR 2800E bridge, III. 21.4 05/08/00 22:40 Grab 1.40 8.2 CR 900N bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 1.93 7.8 Milford, III. 34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab na 6.8	SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	7.2	0.2	0.85	0.04	53	1	88	_	8.9	0.1
CR 3000E bridge, III. 17.7 05/08/00 19:15 Grab 1.14 8.3 CR 2800E bridge, III. 21.4 05/08/00 22:40 Grab 1.40 8.2 CR 2400E bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 1.83 7.8 Milford, III. 34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab na 6.8	SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06	8.4	0.3	0.93	0.02	31	_	87	7	6.3	0.2
CR 2800E bridge, III. 21.4 05/08/00 22:40 Grab 1.40 8.2 CR 900N bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 2.06 7.6 Milford, III. 37.8 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab na 6.8	SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	8.3	0.3	0.94	0.04	31	_	98	0	6.3	0.1
CR 900N bridge, III. 26.9 05/01/00 05:35 Grab 1.83 7.8 CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 2.06 7.6 Milford, III. 34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 28.5 05/01/00 06:10 Grab na 6.8	SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	8.2	0.2	0.97	90.0	32	7	8	_	6.2	0.2
CR 2440E bridge, III. 30.1 05/09/00 08:45 Grab 2.06 7.6 Milford, III. 34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 21.2 05/08/00 06:10 Grab na 6.8	SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	7.8	0.2	1.0	0.0	32	_	6/	_	5.4	0.1
Milford, III. 34.4 05/09/00 11:10 Grab 1.95 8.2 Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 21.2 05/08/00 21:20 Grab 0.33 6.7 Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8	SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	9.7	0.1	1.0	0.0	32	_	77	_	5.4	0.1
Above Mud Cr. #3, III. 37.8 05/09/00 17:15 Grab 1.92 8.0 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 21.2 05/08/00 06:10 Grab 0.33 6.7 Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8	SC09	Milford, III.	34.4	02/06/00	11:10	Grab	1.95	8.2	0.1	1.0	0.0	31	_	77	_	5.6	0.2
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 21.2 05/08/00 21:20 Grab 0.33 6.7 Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8	SC10	Above Mud Cr. #3, III.	37.8	02/06/00	17:15	Grab	1.92	8.0	0.1	1.2	0.1	31	1	74	0	5.5	0.1
Mud Cr. #1, Ind. 11.7 05/08/00 11:30 Grab 0.38 9.6 Mud Cr. #2, III. 21.2 05/08/00 21:20 Grab 0.33 6.7 Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8		GAR CRE		ARIES													
Mud Cr. #2, III. 21.2 05/08/00 21:20 Grab 0.33 6.7 Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8	SCT1	Mud Cr. #1, Ind.	11.7	02/08/00	11:30	Grab	0.38	9.6	0.1	0.82	0.02	32	1	06	1	5.8	0.1
Unnamed trib III. 28.5 05/01/00 06:10 Grab na 6.8	SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	6.7	0.1	0.75	0.03	32	_	99	_	4.1	0.0
	SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	8.9	0.2	96.0	90.0	33	2	71	1	5.1	0.1

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	0	Al		As		В		Ba		Be	
Name	-	km				cms	µg/L	. 1	J/gµ	Г	$\mu g/L$		µg/L	1	I/gµ	,
							Avg	SD	Avg	SD	Avg	D	Avg !	SD	Avg	SD
	IROQUOIS RIVER	RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	2.1	0.1	68.0	0.02	22	6	64	2	< 0.004	0.003
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	1.3	0.4	0.83	90.0	54	9	65	0	< 0.004	0.005
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	7.1	0.1	0.75	0.03	43	ω	28	0	< 0.004	900.0
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab	19.8	4.1	0.1	0.79	0.04	59	11	59	_	< 0.004	900.0
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.	17.0	3.6	0.3	0.79	0.04	59	10	28	0	< 0.004	0.008
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0	< 0.5	1.8	1.1	0.0	99	9	99	_	< 0.004	900.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	< 0.5	0.3	1.0	0.0	20	∞	52	_	< 0.004	900.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	4.0	0.1	0.64	0.05	43	κ	53	_	< 0.004	0.003
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	6.3	0.1	69.0	0.02	47	7	53	0	< 0.01	0.01
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	4.3	0.1	0.63	0.01	47	_	54	_	< 0.01	0.01
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	2.9	0.1	0.65	0.03	47	0	55	_	< 0.01	0.00
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	2.8	0.1	99.0	0.02	46	_	55	_	< 0.01	0.01
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	2.9	0.0	0.61	0.01	45	_	55	_	< 0.01	0.00
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	3.0	0.1	0.60	0.01	46	1	53	0	< 0.01	0.00
	SUGAR CREEK	REEK														
SC01	CR 400W bridge, Ind.	0.0	02/08/00	13:20	Grab	0.39	1.0	0.1	0.49	0.00	38	2	46	0	< 0.01	0.01
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	1.3	0.1	0.49	0.02	40	α	47	_	< 0.01	0.00
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	1.5	0.2	0.55	0.00	39	α	51	0	< 0.01	0.01
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	1.3	0.1	0.57	90.0	39	7	51	0	< 0.01	0.00
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	8.0	0.1	0.56	0.02	40	7	49	_	< 0.01	0.00
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	8.0	0.0	0.54	0.03	4	7	20	_	< 0.01	0.01
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	1.4	0.2	0.51	0.02	4	_	4	1	< 0.01	0.01
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	6.0	0.0	0.56	0.01	4	_	45	\vdash	< 0.01	0.00
SC09	Milford, III.	34.4	02/06/00	11:10	Grab	1.95	1.1	0.0	0.52	0.01	4	_	41	0	< 0.01	0.00
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	6.5	0.1	0.58	0.02	46	1	40	1	< 0.01	0.01
	SUGAR CREEK TRIBUT	RIBUT	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	1.0	0.0	0.46	0.02	30	1	99	1	< 0.01	0.01
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	1.5	0.1	0.40	0.02	46	_	21	0	< 0.01	0.01
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	9.0	0.1	0.53	0.02	4	κ	31	1	< 0.01	0.00
1000	Most as beauty and condition to prositional man of a large and	J. 2. L.	1. 1													

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist.	Date	Time	Type ²	o	Bi		Cd		Ce		Co	
Name ¹	-	km				cms	1/gµ	. 1	l/gµ	L	I/gµ	د	l/gµ	L
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVER												
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	< 0.001	0.0008	0.015	0.001	0.020	0.000	< 0.002	0.013
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.0015	0.0006	0.015	0.005	0.023	0.001	< 0.002	0.007
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8	< 0.001	0.0005	0.016	0.001	0.032	0.001	< 0.002	0.012
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8	< 0.001	9000.0	0.014	0.002	0.028	0.000	< 0.002	0.010
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	< 0.001	0.0004	0.016	0.003	0.027	0.002	< 0.002	0.007
IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0	< 0.001	0.0004	0.012	0.002	0.0055	0.0004	< 0.002	0.015
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	< 0.001	0.0006	0.012	0.003	0.015	0.001	< 0.002	0.009
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	< 0.001	0.0008	0.015	0.003	0.027	0.001	< 0.002	0.008
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	< 0.002	0.000	0.002	0.001	0.026	0.001	< 0.002	0.008
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	< 0.002	0.001	0.005	0.001	0.015	0.001	< 0.002	0.016
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	< 0.002	0.001	< 0.002	0.001	0.022	0.001	< 0.002	0.016
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	< 0.002	0.001	0.005	0.005	0.018	0.001	< 0.002	0.018
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	< 0.002	0.001	0.003	0.002	0.022	0.000	< 0.002	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	< 0.002	0.001	0.003	0.002	0.022	0.001	< 0.002	0.019
	SUGAR CREEK	REEK												
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39	< 0.002	0.001	900.0	0.002	0.022	0.001	< 0.002	0.001
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	< 0.002	0.001	0.004	0.001	0.031	0.001	< 0.002	0.015
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	0.004	0.001	0.002	0.001	0.026	0.001	< 0.002	0.012
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	< 0.002	0.001	< 0.002	0.001	0.018	0.000	< 0.002	0.002
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	< 0.002	0.001	0.004	0.003	0.013	0.000	< 0.002	0.007
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	< 0.002	0.001	< 0.002	0.002	0.015	0.001	< 0.002	0.007
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	< 0.002	0.001	< 0.002	0.001	0.013	0.001	< 0.002	0.014
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	< 0.002	0.000	< 0.002	0.001	0.017	0.001	< 0.002	0.011
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95	< 0.002	0.002	< 0.002	0.002	0.016	0.001	< 0.002	900.0
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	< 0.002	0.003	< 0.002	0.001	0.030	0.001	< 0.002	0.007
	SUGAR CREEK TRIBUTARIES	TRIBUT	ARIES											
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	< 0.002	0.001	0.010	0.001	0.016	0.000	< 0.002	900.0
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	< 0.002	0.001	0.004	0.000	0.016	0.001	< 0.002	0.001
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	< 0.002	0.001	0.003	0.002	0.012	0.001	< 0.002	0.011
1 Mor	1 More complete explanations of these are found in table 1	o found :	n toble 1											Ī

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	\circ	Ç		CS		Cu		Dy	,		Er
Name	1	km				cms	µg/L		ug/L		1/gn	ر ر	I/gn	/L	δή	ug/L
						ł	Avg S	SD A	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7 <	0.1	0.0 < 0.0	0.009	0.002	0.70	0.01	0.0043	0.0005	0.0042	0.0004
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7 <	0.1	0.1 < 0) 600.0 >	0.003	0.72	0.02	0.0050	0.0005	0.0052	0.0005
IR02	Highway 16 bridge, Ind.	2.0	09/00/50	21:30	Comp.	> 8.61	0.1	0.0 < 0) 600.0 >).004			0.0069	0.0002	0.0064	0.0003
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab	> 8.61	0.1) 600.0 >	0.003	_		0.0059	0.0004	0.0058	0.0002
IR03	Brook, Ind.	5.9	00/60/50	03:30	Comp.	17.0 <	0.1) 600.0 >	0.001	0.75	0.01	0.0056	0.0006	0.0057	0.0002
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0 <	0.1		> 0.009	0.001	_		0.0029	0.0002	0.0028	0.0004
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	> 2.61	0.1	1.3 < 0	< 0.009	0.002			0.0036	0.0002	0.0031	0.0004
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	> 2.61	0.1		> 0.009	0.002	_		0.0053	0.0001	0.0056	0.0005
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4 <	0.2		< 0.04	0.01	0.73		0.0059	0.0004	0.0059	0.0003
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4 <	0.2	0.1 <	< 0.04	0.02	_		0.0040	0.0003	0.0046	0.0008
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	> 2.61	0.2		< 0.04	0.01	_	_	0.0051	0.0005	0.0053	0.0008
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	> 2.61	0.2		< 0.04	0.01	_	_	0.0043	0.0004	0.0042	0.0009
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3 <	0.2		0.04	0.01	_		0.0053	0.0006	0.0040	0.0003
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3 <	0.2	> 0.0	0.04	0.02	0.66	0.04 (0.0053	0.0006	0.0050	0.0006
	SUGAR CREEK	CREEK														
SC01	CR 400W bridge, Ind.	0.0	00/80/90	13:20	Grab	> 68.0	0.2	> 0.0	0.04	0.01			0.0041	0.0006	0.0030	900000
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab				0.04	0.01	0.94		0.0046	0.0003	0.0027	0.0000
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56 <	< 0.2 (> 0.0	0.04	0.01			0.0036	0.0004	0.0031	0.0005
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab				0.04	0.02			0.0040	0.0000	0.0025	0.0005
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab				0.04	0.00			0.0025	0.0007	0.0015	0.0001
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab				0.04	0.07			0.0027	0.0004	0.0018	0.0003
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab				0.04	0.01			0.0030	0.0001	0.0027	0.0002
SC08	CR 2440E bridge, III.	30.1	00/60/50	08:45	Grab	2.06 <			< 0.04	0.01	0.34	0.03	0.0033	0.0007	0.0027	0.0002
SC09	Milford, III.	34.4	09/60/50	11:10	Grab	1.95 <			0.04	0.02			0.0032	0.0006	0.0023	0.0003
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92 <	: 0.2).1 <	0.04	0.01	0.39	0.02	0.0051	0.0003	0.0034	0.0006
	SUGAR CREEK TRIBUTARIES	TRIBUT	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	00/80/90	11:30	Grab	0.38 <		> 0.0	< 0.04	0.01	1.1	0.0	0.0029	0.0004	0.0025	0.0004
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab				< 0.04	0.00	0.48		0.0021	0.0002	0.0018	0.0002
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na <	: 0.2 C	> 0.0	0.04	0.01	0.40	0.04 (0.0037	0.0005	0.0018	0.0007
1 Mo	1 More complete explanations of these are found in table 1	formed .	in toble 1													

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	0	Eu		Fe		PS		Hg		Ho	
Name ¹	_	km				cms	µg/L	L	µg/L		$\mu g/L$		ng/L		hg/L	ر
							Avg	SD	Avg S	SD A		SD		SD	Avg	SD
	IROQUOIS RIVER	S RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	< 0.0003	0.0013	25	2 0.0	0.0050 0.0	0.0004	0.7).1 0	0.0010	0.0000
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	< 0.0003	0.0005	33	2 0.0	0.0055 0.0	> 900000	< 0.3 (3.0	0.0014	0.0001
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8	0.0006	0.0002	8.9 2	2.3 0.0	0.0078 0.0	0.0009	0.7	0.2 0	0.0017	0.0000
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8	0.0008	0.0007	15	1 0.0	0.0069 0.0	0.0005	< 0.5	0.0	0.0015	0.0000
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	0.0013	0.0008	12	2 0.0		0.0003			0.0014	0.0000
IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0	< 0.0003	0.0003	3.0 0	0.1 0.0		0.0008	1.1	0.4 0	0.0007	0.0000
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.0008	9000.0		0.3 0.0		9000.0	0.6		0.0008	0.0001
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.0005	0.0005	7.5 2	2.8 0.0	0.0074 0.0	9000.0	0.8	0.1 0	0.0013	0.0002
IR05	CR 100W bridge, Ind.	12.0	05/10/00	,	Comp.	17.4	< 0.0002	0.0011	9.5 0	0.1 0.0		0.0010		0.1 0	0.0015	0.0001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.0005	0.0016	0.99	0.1 0.0	0.0048 0.0	0.0009		0.1 0	0.0000	0.0002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.0004	0.0007	8.1 0	0.1 0.0	0.0053 0.0	0.0004	0.8	0.5 0	0.0012	0.0001
IR06	Highway 41 bridge, Ind.	16.5	05/11/00		Grab	19.5	0.0006	0.0019	~		_	0.0007	0.7	0.2 0	0.0012	0.0000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.0004	0.0014	9.1 0	0.3 0.0	0.0060 0.0	0.0008	0.8	0.1 0	0.0011	0.0000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.0013	0.0024	12	0.0	0.0060 0.0	0.0012	< 0.2 (0.3 0	0.0013	0.0001
	SUGAR CREEK	REEK														
SC01	CR 400W bridge, Ind.	0.0	00/80/50		Grab	0.39	< 0.0002	0.0012	40	1 0.0	0.0054 0.0	8000'0	5.4 ().1 0	0.0010	0.0003
SC02	CR 600W bridge, Ind.	4.5	02/08/00		Grab	0.50	0.0005	0.0003	38	0.0		0.0004	_	_	0.0009	0.0002
SC03	Highway 71 bridge, Ind.	8.6	02/08/00		Grab	0.56	< 0.0002	0.0011	33	1 0.0		0.0008	< 0.2 (0.1 0	0.0009	0.0002
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00		Grab	1.06	< 0.0002	0.0012	23	0.0		0.0007			0.0008	0.0001
SC05	CR 3000E bridge, III.	17.7	02/08/00		Grab	1.14	< 0.0002	0.0003	19			0.0003			0.0005	0.0001
SC06	CR 2800E bridge, III.	21.4	02/08/00		Grab	1.40	< 0.0002	0.0000	18	0.0		0.0003	2.3	0.3 0	9000.0	0.0002
SC07	CR 900N bridge, III.	26.9	05/01/00		Grab	1.83	< 0.0002	0.0011	6.9	0.3 0.0	0.0045 0.0	0.0011		0.2 0	9000.0	0.0001
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	5.06	< 0.0002	0.0002	10	0.0		9000.0	0.5		0.0007	0.0003
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95	< 0.0002	0.0005	7.8 0	.3 0.0	0.0045 0.0	0.0004		0.2 0	0.0007	0.0000
SC10	Above Mud Cr. #3, III.	37.8	02/06/00	17:15	Grab	1.92	< 0.0002	0.0000	3.1 0	0.0 0.0	0.0065 0.0	0.0010	0.5 ().1 0	0.0012	0.0001
	SUGAR CREEK TRIBUTARIES	TRIBUT	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	< 0.0002	0.0007	12	0.0	0.0049 0.0	0.0003	< 0.2 (0.2 0	0.0008	0.0001
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	< 0.0002	0.0004	12	0.0	0.0037 0.0	0.0005	_		900000	0.0001
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	< 0.0002	0.0001	6.4 0	0.4 0.0	0.0047 0.0	0.0007	1.1	0.1 0	0.0008	0.0000
1 Mor	1 More complete explanations of these are found in table 1	e found :	n table 1													

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	\circ	La	a	Li		Lu	n	Mn	_	Mo	
Name ¹		km				cms	I/gµ	/L	µg/L	Ţ	I/gµ	/L	J/gµ	J	µg/L	,
							Avg	SD	Avg	SD	Avg	SD	Avg	3D	Avg S	SD
	IROQUOIS RIVE	S RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.013	0.000	3.8	0.1	0.0017	0.0000	33	2	5.0 0	<u></u>
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.015	0.001	3.7	0.0	0.0016	0.0001	33	7		0:0
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	0.026	0.000	3.6	0.0	0.0018	0.0001	20	5		0:0
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab	19.8	0.022	0.001	3.7		0.0014	0.0002	24	7		0.0
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.	17.0	0.023	0.000	3.5		0.0014	0.0000	12	1		1.
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0	0.0067	0.0003	3.6	0.1	0.0010	0.0001	8.1	0.3		0.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.011	0.000	3.3		0.0009	0.0001	6.9	0.4		0.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.022	0.001	3.0		0.0016	0.0001	8.2	1.4		0:0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.021	0.001	3.3		0.0014	0.0002	5.5	0.2		1.
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.012	0.001	3.3	0.0	0.0010	0.0001	7.2	0.4		0.0
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.018	0.001	3.2	0.1	0.0015	0.0001		0.5		1.
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.014	0.001	3.2	0.1	0.0014	0.0001		0.5	3.8 0	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.018	0.001	3.1	0.0	0.0014	0.0002	3.6	0.2		1.
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.017	0.000	3.2	0.1	0.0012	0.0000	3.9	0.2		0:0
	SUGAR CREEK	CREEK														
SC01	CR 400W bridge, Ind.	0.0	02/08/00	13:20	Grab	0.39	0.017	0.000	3.9	0.1	0.0005	0.0001	16	1	3.7 0	1.1
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	0.021	0.001	3.9	0.1	0.0004	0.0000	29	0		.1
SC03	Highway 71 bridge, Ind.	9.8	02/08/00	10:15	Grab	0.56	0.019	0.000	3.7		9000.0	0.0001	32	0		0.0
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06	0.012	0.001	3.6		0.0004	0.0001	14	_		0:0
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	0.0089	0.0002	3.7		0.0003	0.0001	111	0		1.
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	0.011	0.001	3.7		0.0004	0.0000	12	0		0.0
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	0.010	0.001	3.5	0.1	0.0004	0.0001	8.8	0.2	3.6 0	0.1
SC08	CR 2440E bridge, III.	30.1	02/09/00	08:45	Grab	2.06	0.011	0.001	3.7	0.1	0.0004	0.0000	14	0		0:0
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95	0.011	0.000	3.7	0.1	0.0003	0.0001	11	0		0.0
SC10	Above Mud Cr. #3, III.	37.8	02/09/00	17:15	Grab	1.92	0.022	0.001	3.6	0.1	90000.0	0.0000	11	0		<u></u>
	SUGAR CREEK	TRIBUT	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	02/08/00	11:30	Grab	0.38	0.010	0.001	2.9	0.1	0.0004	0.0001	23	0		1.1
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	0.010	0.001	3.8	0.1	0.0003	0.0001	9.6	0.0	2.3 0	0.0
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	0.0084	0.0002	3.9	0.1	0.0003	0.0001	17	0		0.0
More con	More complete explanations of these are found in table	det in bur	1													1

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

			1	,							11	4	
km				cms	μg/I Avg	L SD	hg/L Avg S	Ω	µg/L	Avg	μg/L SD	hg/L Avg S	./L SD
IROQUOIS RIVER)))))	
0.0	05/01/00		Comp.	5.7	0.017	0.001	1.8	0.0 0.0				0.87	0.02
0.0	05/01/00		Grab	5.7	0.017	0.001	1.4	0.0 0.0		_		0.87	0.01
2.0	02/06/00		Comp.	19.8	0.030	0.001	1.4	0.5 0.0	_	_		0.84	0.01
2.0	02/00/00		Grab	19.8	0.025	0.001	1.6	0.1 0.0	_	_		0.84	0.01
5.9	02/06/00	_	Comp.	17.0	0.026	0.001	1.5	0.0 0.0	_			0.84	0.00
5.9	02/00/00	_	Grab	17.0	0.0087	0.0003	1.0	0.1 0.0	_	_		0.86	0.02
9.4	05/10/00	_	Comp.	19.5	0.013	0.001	0.9	0.0 8.0		_		0.85	0.00
9.4	05/10/00	_	Grab	19.5	0.026	0.001	0.9	0.0 8.0	_			0.82	0.01
12.0	05/10/00		Comp.	17.4	0.026	0.001	2.3	0.0 8.0	_			0.85	0.01
12.0	05/10/00		Grab	17.4	0.016	0.001	1.9	0.0 6.0	_	_		0.84	0.00
16.5	05/11/00		Comp.	19.5	0.022	0.001	1.7	0.1 0.0	_	_		0.83	0.02
16.5	05/11/00		Grab	19.5	0.018	0.001	2.0	0.0 0.0	_	_		0.82	0.00
21.1	05/11/00	$\overline{}$	Comp.	19.3	0.023	0.001	1.7 (0.0 0.0	_			0.87	0.00
21.1	05/11/00	_	Grab	19.3	0.023	0.002	2.3	0.0 0.0	_			0.87	0.01
SUGAR CREEK													
0.0	02/08/00	13:20	Grab	0.39	0.019	0.001	1.8	0.0 4.0				0.43	0.01
4.5	02/08/00	13:45	Grab	0.50	0.025	0.001	1.7	_				0.49	0.00
8.6	02/08/00	10:15	Grab	0.56	0.021	0.001	_					0.55	0.00
14.0	02/08/00	15:30	Grab	1.06	0.015	0.001		_				0.59	0.01
17.7	02/08/00	19:15	Grab	1.14	0.011	0.001	_	_				0.60	0.01
21.4	02/08/00	22:40	Grab	1.40	0.012	0.001	_	•				0.62	0.01
26.9	05/01/00	05:35	Grab	1.83	0.013	0.001	1.6	0.0 0.0				99.0	0.00
30.1	02/06/00	08:45	Grab	2.06	0.014	0.000	1.7 (0.0 5.0				0.62	0.01
34.4	02/06/00	11:10	Grab	1.95	0.014	0.001	1.6	0.1 0.0				0.61	0.00
37.8	02/06/00	17:15	Grab	1.92	0.026	0.001	1.5	0.0 8.0				0.64	0.01
SUGAR CREEK TRIBUTA	ARIES												
11.7	02/08/00	11:30	Grab	0.38	0.012	0.000						0.46	0.01
21.2	02/08/00	21:20	Grab	0.33	0.012	0.000						0.43	0.01
28.5	05/01/00	06:10	Grah	64	0.011	0000						120	000
	S RIVER 0.0 0.0 2.0 2.0 2.0 2.0 3.0 10.0	S RIVER 0.0 05/01/00 0.0 05/01/00 2.0 05/09/00 2.0 05/09/00 2.0 05/09/00 2.0 05/09/00 2.0 05/09/00 2.0 05/09/00 9.4 05/10/00 12.0 05/11/00 12.0 05/11/00 12.0 05/11/00 12.0 05/11/00 14.0 05/08/00 14.0 05/08/00 14.0 05/08/00 21.4 05/08/00 21.4 05/08/00 21.4 05/08/00 21.4 05/08/00 30.1 05/09/00 34.4 05/09/00 37.8 05/09/00 37.8 05/09/00 37.8 05/08/00 37.8 05/08/00 37.8 05/08/00 37.8 05/08/00 37.8 05/08/00 37.8 05/08/00	S RIVER 0.0 05/01/00 14:20 0.0 05/01/00 14:20 2.0 05/09/00 21:30 2.0 05/09/00 21:30 2.0 05/09/00 21:30 5.9 05/09/00 03:30 9.4 05/10/00 08:40 12.0 05/10/00 11:20 12.0 05/10/00 11:20 12.0 05/10/00 13:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/11/00 00:30 21.1 05/08/00 13:45 9.8 05/08/00 15:30 17.7 05/08/00 15:30 17.7 05/08/00 15:30 17.7 05/08/00 15:30 37.8 05/09/00 17:15 TRIBUTARIES TTRIBUTARIES 11.7 05/08/00 11:10 37.8 05/08/00 11:10 37.8 05/08/00 11:10	05/01/00 14:20 C 05/01/00 14:20 C 05/09/00 21:30 C 05/09/00 21:30 C 05/09/00 03:30 C 05/10/00 08:40 C 05/10/00 08:40 C 05/10/00 11:20 C 05/10/00 11:20 C 05/11/00 18:00 C 05/11/00 18:00 C 05/11/00 18:00 C 05/11/00 18:00 C 05/11/00 18:00 C 05/11/00 00:30 C 05/11/00 00:30 C 05/08/00 13:25 C 05/08/00 13:25 C 05/08/00 10:15 C 05/08/00 10:15 C 05/08/00 10:15 C 05/09/00 06:45 C 05/09/00 11:10 C	05/01/00 14:20 Comp. 05/01/00 14:20 Comp. 05/09/00 21:30 Comp. 05/09/00 21:30 Comp. 05/09/00 03:30 Comp. 05/09/00 03:30 Comp. 05/10/00 08:40 Grab 05/10/00 08:40 Grab 05/11/00 11:20 Comp. 05/11/00 18:00 Comp. 05/11/00 13:20 Grab 05/11/00 10:30 Grab 05/11/00 10:30 Grab 05/11/00 10:30 Grab 05/08/00 13:45 Grab 05/08/00 13:45 Grab 05/08/00 10:15 Grab 05/08/00 10:15 Grab 05/08/00 15:30 Grab 05/08/00 11:10 Grab 05/09/00 08:45 Grab 05/09/00 11:10 Grab 05/09/00 11:10 Grab 05/09/00 11:10 Grab	05/01/00 14:20 Comp. 5.7 (05/01/00 14:20 Grab 5.7 (05/09/00 21:30 Comp. 19:8 (05/09/00 21:30 Comp. 19:8 (05/09/00 21:30 Comp. 19:8 (05/09/00 03:30 Comp. 17:0 (05/09/00 03:30 Comp. 17:0 (05/10/00 08:40 Comp. 17:0 (05/10/00 08:40 Comp. 19:5 (05/10/00 11:20 Comp. 19:5 (05/11/00 18:00 Comp. 19:5 (05/11/00 18:00 Comp. 19:5 (05/11/00 00:30 Comp. 19:5 (05/11/00 00:30 Grab 19:5 (05/08/00 13:20 Grab 0.50 (05/08/00 13:45 Grab 0.50 (05/08/00 15:30 Grab 1.40 (05/08/00 15:30 Grab 1.40 (05/09/00 08:45 Grab 1.95 (05/09/00 08:45 Grab 1.95 (05/09/00 17:15 Grab 1.95 (05/09/00 17:15 Grab 1.95 (05/08/00 17:15 Grab 1.95 (05/08/00 17:15 Grab 0.33 (05/08/00 11:10 Grab 0.33 (05/08/00 21:20 Grab 0.33 (05/08/00 21:20 Grab 0.33 (05/01/00 05:10 Grab 0.33 (05/01/00	Avg 05/01/00 14:20 Comp. 5.7 0.017 0 05/01/00 14:20 Grab 5.7 0.017 0 05/09/00 21:30 Comp. 19.8 0.030 0 05/09/00 21:30 Grab 19.8 0.025 0 05/09/00 21:30 Grab 19.8 0.026 0 05/09/00 21:30 Grab 19.8 0.026 0 05/10/00 08:40 Comp. 19.5 0.013 0 05/10/00 08:40 Grab 19.5 0.026 0 05/11/00 08:40 Grab 19.5 0.016 0 05/11/00 11:20 Grab 19.5 0.018 0 05/11/00 18:00 Grab 19.5 0.018 0 05/11/00 18:00 Grab 19.5 0.019 0 05/08/00 13:45 Grab 1.94 0.011 0	Avg SD Avg 05/01/00 14:20 Comp. 5.7 0.017 0.001 1.8 05/01/00 14:20 Grab 5.7 0.017 0.001 1.4 05/09/00 21:30 Comp. 19.8 0.036 0.001 1.4 05/09/00 21:30 Grab 19.8 0.025 0.001 1.4 05/09/00 21:30 Grab 17.0 0.026 0.001 1.6 05/09/00 03:30 Grab 17.0 0.026 0.001 1.5 05/10/00 08:40 Grab 19.5 0.013 0.001 1.9 05/10/00 11:20 Grab 19.5 0.026 0.001 1.9 05/10/00 11:20 Grab 19.5 0.026 0.001 1.9 05/11/00 08:40 Grab 19.5 0.012 0.001 1.7 05/11/00 08:30 Grab 19.5 0.012 0.001 1.9	Avg SD Avg SD 05/01/00 14:20 Comp. 5.7 0.017 0.001 1.8 0.2 05/01/00 14:20 Grab 5.7 0.017 0.001 1.4 0.2 05/09/00 21:30 Comp. 19:8 0.030 0.001 1.4 0.5 05/09/00 21:30 Grab 19:8 0.025 0.001 1.4 0.5 05/09/00 21:30 Grab 17:0 0.026 0.001 1.6 0.1 05/09/00 03:30 Grab 17:0 0.0087 0.001 1.9 0.3 05/10/00 08:40 Grab 19:5 0.012 0.001 1.9 0.3 05/10/00 08:40 Grab 19:5 0.026 0.001 1.9 0.3 05/11/00 08:40 Grab 19:5 0.025 0.001 1.7 0.0 05/11/00 08:30 Grab 19:3 0.023 0.001	Avg SD SO/1/00 14:20 Grab 5.7 0.017 0.001 1.8 0.2 0.045 05/09/00 21:30 Grab 5.7 0.017 0.001 1.4 0.2 0.045 05/09/00 21:30 Grab 19.8 0.035 0.0001 1.4 0.5 0.028 05/09/00 21:30 Grab 19.8 0.025 0.001 1.6 0.1 0.026 05/09/00 03:30 Grab 17.0 0.0087 0.0003 1.0 0.1 0.004 05/10/00 08:40 Grab 17.0 0.0026 0.001 1.5 0.2 0.002 05/10/00 08:40 Grab 19.5 0.026 0.001 1.9 0.3 0.009 05/10/00 08:40 Grab 19.5 0.026 0.001 1.9 0.3 0.009 05/10/00 11:20 Grab 19.5 0.026 0.001 1.9 0.3 0.009 05/10/00 11:20 Grab 19.5 0.026 0.001 1.9 0.3 0.009 05/10/00 11:20 Grab 19.5 0.028 0.001 1.7 0.1 0.040 05/11/00 00:30 Grab 19.3 0.023 0.001 1.7 0.1 0.040 05/11/00 00:30 Grab 19.3 0.023 0.001 1.7 0.1 0.038 05/11/00 00:30 Grab 19.3 0.023 0.001 1.7 0.0 0.026 05/11/00 00:30 Grab 19.3 0.025 0.001 1.7 0.1 0.039 05/08/00 13:45 Grab 0.56 0.021 0.001 1.7 0.4 0.055 05/08/00 15:30 Grab 1.06 0.015 0.001 1.7 0.1 0.034 05/08/00 15:30 Grab 1.06 0.015 0.001 1.5 0.1 0.034 05/08/00 15:30 Grab 1.06 0.015 0.001 1.5 0.1 0.039 05/08/00 15:30 Grab 1.06 0.015 0.001 1.5 0.1 0.038 05/08/00 15:30 Grab 1.06 0.015 0.001 1.5 0.1 0.038 05/08/00 15:30 Grab 1.90 0.014 0.001 1.5 0.1 0.038 05/08/00 17:15 Grab 1.95 0.014 0.001 1.5 0.1 0.038 05/08/00 11:10 Grab 1.95 0.014 0.000 1.7 0.5 0.029 05/08/00 11:10 Grab 1.95 0.014 0.000 1.7 0.5 0.029 05/08/00 11:10 Grab 0.38 0.012 0.000 1.7 0.5 0.055 05/08/00 11:30 Grab 0.38 0.012 0.000 1.7 0.5 0.055 05/08/00 05:30 0.013 0.012 0.000 1.5 0.1 0.005 05/08/00 11:30 Grab 0.38 0.012 0.000 1.5 0.1 0.005 0.015 05/08/00 11:30 Grab 0.38 0.012 0.000 1.5 0.1 0.005 0.015 0.015 0	AVIG S.D. AVIG S.D	Avg SD SO SD Avg SD SO SD Avg SD SO SD SD Avg SD SD SD Avg SD SD SD SD SD SD Avg SD	Avg SD Avg Avg SD Avg Avg

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	\circ	Re		S	Sb	Se		S	Sm	Sr	
Name ¹	_	km				cms	1/gn	J	1/gn	\r	µg/L	Ţ	hg/L	7/5	µg/L	_
						,	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7 0	0.021	0.001	0.14	0.00	6.0	0.1	0.0034	0.0006	569	4
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7 0	0.019	0.001	0.14	0.01	6.0	0.0	0.0036	0.0005	257	_
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Comp.	19.8 0	0.019	0.001	0.13	0.01	1.0	0.0	0.0066	0.0002	257	_
IR02	Highway 16 bridge, Ind.	2.0	02/06/00	21:30	Grab	19.8 0	0.017	0.001	0.13	0.00	6.0	0.0	0.0056	0.0004	254	5
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.		0.019	0.001	0.13	0.01	6.0	0.1	0.0054	0.0002	250	7
IR03	Brook, Ind.	5.9	02/06/00	03:30	Grab	17.0 0	.019	0.001	0.14	0.01	1.5	0.1	0.0029	0.0001	253	κ
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5 0	.015	0.001	0.13	0.01	1.6	0.2	0.0033	0.0007	226	7
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab		0.016	0.000	0.12	0.00	6.0	0.0	0.0066	0.0006	216	_
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4 0	0.017	0.001	0.12	0.00	1.2	0.0	0.0058	0.0003	229	_
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4 0	0.017	0.001	0.13	0.00	1.1	0.0	0.0033	0.0006	229	_
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.		0.017	0.001	0.12	0.00	1.0	0.1	0.0045	0.0002	232	\mathfrak{S}
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5 0	0.016	0.001	0.12	0.01	1.1	0.1	0.0042	0.0008	229	_
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.		0.017	0.000	0.13	0.01	1.0	0.1	0.0044	0.0009	222	_
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3 0	.016	0.001	0.13	0.01	1.0	0.0	0.0040	0.0006	225	1
	SUGAR CREEK	REEK														
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab		0.015	0.001	0.078	0.001	2.2	0.1	0.0037	0.0000	189	3
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab		0.014	0.001	0.091	0.002	2.3	0.0	0.0053	0.0009	189	_
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab		0.018	0.001	0.088	0.003	2.1	0.1	0.0040	0.0001	176	_
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab		.017	0.001	0.11	0.01	2.0	0.1	0.0034	0.0004	170	4
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14 0	.017	0.001	0.11	0.00	1.9	0.1	0.0023	0.0011	172	7
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40 0	0.017	0.001	0.11	0.00	1.9	0.1	0.0027	0.0004	170	7
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83 0	0.015	0.000	0.10	0.01	1.5	0.0	0.0029	0.0006	159	4
SC08	CR 2440E bridge, III.	30.1	02/06/00	08:45	Grab	_	0.015	0.001	0.10	0.00	1.5	0.1	0.0035	0.0011	154	7
SC09	Milford, III.	34.4	02/06/00	11:10	Grab	1.95 0	0.015	0.000	0.10	0.01	1.4	0.2	0.0038	0.0001	157	7
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92 0	.013	0.000	0.10	0.00	1.4	0.2	0.0051	0.0002	151	1
	SUGAR CREEK TRIBUTA	FRIBUT	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	02/08/00	11:30	Grab	0.38 0	0.018	0.001	0.11	0.00	1.9	0.1	0.0036	0.0001	152	2
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33 0	0.011	0.000	0.068	0.006	1.7	0.1	0.0025	0.0004	134	ω
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na 0	0.010	0.000	0.061	0.001	1.1	0.1	0.0035	0.0010	121	0
المرادية	I alon on house of one and the section of any other and a section of	1 - 1 :- 1	1-1													

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist.1	Date	Time	Type ²	\circ	Ta		Tb	Te		Th	ų	Ti	
Name ¹	1	km				cms	µg/L	ñ	hg/L	J/gµ	L	T/gn	/L	µg/L	1
							Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S RIVER													
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7 <	< 0.005 0.003	3 0.0007	0.0001	0.010	0.000	0.0011	0.0002	< 0.1	0.1
IR01	Highway 55 gage, Ind.	0.0	05/01/00		Grab	5.7 <	< 0.005 0.001	9000.0	0.0002	0.011	0.004	0.0014	0.0001	< 0.1	0.2
IR02	Highway 16 bridge, Ind.	2.0	02/09/00		Comp.	> 8.61	< 0.005 0.002	2 0.0011	0.0001	0.010	0.013	0.0016	0.0001	< 0.1	0.1
IR02	Highway 16 bridge, Ind.	2.0	02/09/00		Grab	> 8.61	< 0.005 0.003	3 0.0010	0.0000	< 0.01	0.005	0.0012	0.0001	< 0.1	0.0
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.	17.0 <	< 0.005 0.003	3 0.0010	0.0000	< 0.01	0.005	0.0015	0.0001	< 0.1	0.0
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab		0.023 0.005	5 0.0003	0.0000	< 0.01	0.007	0.0000	0.0002	< 0.1	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.024 0.002	2 0.0007	0.0001	< 0.01	0.002	0.0015	0.0001	< 0.1	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00		Grab	> 2.61	< 0.005 0.002	0.0009	0.0000	< 0.01	900.0	0.0016	0.0005	< 0.1	0.0
IR05	CR 100W bridge, Ind.	12.0	05/10/00		Comp.	17.4	< 0.002 0.001	0.0011	0.0000	0.013	0.004	0.0016	0.0002	< 0.04	90.0
_ IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	< 0.002 0.001	0.0007	0.0001	< 0.008	0.003	0.0014	0.0005	< 0.04	0.02
3 IR06	Highway 41 bridge, Ind.	16.5	05/11/00		Comp.	> 2.61	< 0.002 0.001	0.0010	0.0000	0.012	0.008	0.0014	0.0001	< 0.04	0.03
IR06	Highway 41 bridge, Ind.	16.5	05/11/00		Grab	> 2.61	< 0.002 0.000		0.0001	< 0.008	0.004	0.0013	0.0002	< 0.04	80.0
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00		Comp.	19.3 <	< 0.002 0.001	0.0008	0.0001	0.009	0.004	0.0015	0.0002	< 0.04	0.02
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3 <	0.002 0.001	0.0007	0.0001	0.014	0.007	0.0016	0.0004	< 0.04	60.0
	SUGAR CREEK	CREEK													
SC01	CR 400W bridge, Ind.	0.0	02/08/00	13:20	Grab	> 65.0	< 0.002 0.001	6000.0	0.0001	0.011	0.002	0.0013	0.0002	< 0.04	0.05
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	< 0.002 0.001		0.0000	0.011	0.002	0.0016	0.0003	< 0.04	0.09
SC03	Highway 71 bridge, Ind.	8.6	02/08/00		Grab		< 0.002 0.001	9000.0	0.0001	0.012	0.004	0.0016	0.0001	< 0.04	0.10
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06	< 0.002 0.001	0.0005	0.0001	0.013	0.005	0.0012	0.0002	< 0.04	0.04
SC05	CR 3000E bridge, III.	17.7	02/08/00		Grab	1.14 <	< 0.002 0.001		0.0001	0.020	0.004	0.0010	0.0001	< 0.04	90.0
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40 <	< 0.002 0.001	0.0005	0.0000	0.00	0.003	0.0013	0.0002	< 0.04	0.02
SC07	CR 900N bridge, III.	26.9	05/01/00		Grab	1.83	< 0.002 0.000	0.0005	0.0001	0.017	0.005	0.0000	0.0002	< 0.04	0.17
SC08	CR 2440E bridge, III.	30.1	02/06/00		Grab	2.06 <	< 0.002 0.000		0.0001	0.008	0.003	0.0000	0.0003	< 0.04	60.0
SC09	Milford, III.	34.4	02/09/00		Grab	1.95 <	0.002 0.001	9000.0	0.0002	0.020	900.0	0.0010	0.0002	< 0.04	90.0
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92 <	0.002 0.001	0.0008	0.0001	0.011	0.005	0.0007	0.0002	< 0.04	0.04
	SUGAR CREEK TRIBUTARIES	TRIBUT	ARIES												
SCT1	Mud Cr. #1, Ind.	11.7	02/08/00		Grab	> 86.0	< 0.002 0.001	0.0005	0.0001	0.016	800.0	0.0012	0.0002	< 0.04	0.02
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:	Grab	0.33 <	< 0.002 0.001	900000	0.0001		0.003	0.0014	0.0003	< 0.04	0.02
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na <	0.002 0.000	0.0004	0.0001	0.011	0.003	0.0005	0.0002	< 0.04	0.01
1 1	1 More complete explanations of these are found in table 1	a are four	4 in table 1												

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	$Type^2$	o			T	Tm	n		>		M	
Name ¹	-	km				cms	l/gµ	Ţ	β'n	µg/L	$\mu g/L$		µg/L		J/gµ	١
							Avg	SD	Avg	SD	Avg	D	Avg	SD	Avg	SD
	IROQUOIS RIVER	RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.		0.0087	0.0020	0.0008	0.0000	2.4			.01	0.004	0.000
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	_	0.0093	0.0036	0.0011	0.0001	2.3			.04	0.002	0.001
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	0.011	0.003	0.0010	0.0000	2.2	0.1	0.10	0.05	0.004	0.001
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab		0.010	0.001	0.0010	0.0001	2.2			.05	0.003	0.001
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.		0.010	0.003	0.0011	0.0001	2.2			.02	0.003	0.000
IR03	Brook, Ind.	5.9	09/00/50	03:30	Grab	_	9900.0	0.0013	0.0004	0.0000	2.1	٧		.02	0.036	0.018
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	_	0.0072	0.0030	0.0005	0.0002	1.8	٧		.02	0.039	0.000
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	_	0.0091	0.0005	0.0007	0.0000	1.9			.02	0.004	0.001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.		0.010	0.001	0.0010	0.0000	2.0			0.0	0.005	0.001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab		0.012	0.002	0.0008	0.0001	1.9			0.1	0.003	0.001
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.		0.010	0.002	0.0007	0.0001	1.9			0.1	0.003	0.002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab		0.010	0.001	0.0005	0.0000	1.9			0.1	0.003	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.		0.010	0.001	0.0008	0.0001	1.9			0.0	0.003	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab		0.011	0.003	0.0009	0.0002	1.9			0.1	0.004	0.000
	SUGAR CREEK	REEK														
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39	900.0	0.002	0.0004	0.0000	5.6	0.0	< 0.2	0.3	0.003	0.000
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	0.007	0.001	0.0004	0.0000	2.5	0.0	< 0.2	0.0	0.009	0.003
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	0.011	0.002	0.0004	0.0000	2.7	0.0	< 0.2	0.0	0.009	0.001
SC04	Stateline Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	0.013	0.000	0.0003	0.0000	2.5	0.1	< 0.2	0.0	0.004	0.001
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	0.014	0.002	0.0002	0.0001	2.5	0.0	< 0.2	0.0	0.003	0.000
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	0.014	0.002	0.0003	0.0000	2.4	0.0	< 0.2	0.0	0.002	0.000
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	0.017	0.003	0.0003	0.0000	2.1	0.0	< 0.2	0.1	0.001	0.000
SC08	CR 2440E bridge, III.	30.1	02/09/00	08:45	Grab	2.06	0.012	0.002	0.0004	0.0001	1.9	0.0	< 0.2	0.0	0.001	0.000
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95	0.014	0.002	0.0003	0.0000	1.9	0.0	< 0.2	0.0	0.017	0.001
SC10	Above Mud Cr. #3, III.	37.8	02/09/00	17:15	Grab	1.92	0.013	0.004	0.0006	0.0001	1.9	0.0	< 0.2	0.1	0.005	0.001
	SUGAR CREEK T	TRIBUTARIES	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	0.011	0.001	0.0003	0.0000	2.4	0.0	< 0.2	0.0	0.007	0.001
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	0.010	0.001	0.0002	0.0000	1:1	0.0	< 0.2	0.0	0.011	0.001
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	0.011	0.001	0.0004	0.0000	1.0	0.0	< 0.2	0.1	900.0	0.000
¹ More	¹ More complete explanations of these are found in table 1	found in	table 1													į

More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type^2	0	Y		Y	Yb	Z	Zn		Zr
Name		km				cms	l/gµ	J	/gm	J/c	/gn	7/c	⊐ .	ug/L
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS	IS RIVER												
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.040	0.001	0.0076	0.0013	1.1	0.2	0.075	0.001
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.037	0.000	0.0076	0.0002	6.5	0.2	0.068	0.003
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	0.052	0.000	0.0078	0.0000	1.3	0.2	0.096	0.006
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Grab	19.8		0.000	0.0085	0.0003	0.76	0.15	0.077	0.004
IR03	Brook, Ind.	5.9	02/09/00	03:30	Comp.	17.0		0.000	0.0082	0.0001	0.77	0.08	0.093	0.003
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0		0.001	0.0036	0.0010	1.3	0.1	0.12	0.00
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5		0.001	0.0047	0.0004	1.3	0.1	0.12	0.00
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5		0.000	0.0067	0.0005	0.68	0.07	0.079	0.002
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.047	0.001	0.0079	0.0005	1.5	0.0	0.073	0.006
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4		0.001	0.0063	0.0003	1.3	0.1	0.069	0.002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5		0.001	0.0072	0.0003	1.9	0.2	0.075	0.007
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.037	0.002	0.0062	0.0003	1.9	0.2	0.062	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.042	0.001	0.0069	0.0004	1.5	0.2	0.080	0.003
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.041	0.000	0.0069	0.0002	1.6	0.2	0.067	0.002
	SUGAR CR	CREEK												
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39		0.002	0.0025	0.0003	24	0	0.030	0.002
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50		0.001	0.0025	0.0005	2.9	0.2	0.039	0.003
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56		0.001	0.0028	0.0004	2.1	0.1	0.024	0.001
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06		0.000	0.0021	0.0003	1.5	0.2	0.020	0.001
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14		0.001	0.0020	0.0002	2.2	0.1	0.016	0.001
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40		0.000	0.0019	0.0004	1.4	0.4	0.018	0.002
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83		0.001	0.0018	0.0004	1.4	0.0	0.020	0.001
SC08	CR 2440E bridge, III.	30.1	02/09/00	08:45	Grab	2.06	_	0.002	0.0025	0.0001	1.4	0.1	0.022	0.000
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95		0.001	0.0032	0.0006	1.5	0.1	0.019	0.001
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	0.053	0.001	0.0033	0.0004	1.1	0.2	0.038	0.004
	SUGAR CREEK TR	TRIBUT	ARIES											
SCT1	Mud Cr. #1, Ind.	11.7	02/08/00	11:30	Grab	0.38		0.001	0.0026	0.0003	2.4	0.1	0.033	0.000
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	0.026	0.002	0.0015	0.0005	4.3	0.1	0.021	0.002
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na		0.001	0.0020	0.0003	2.0	0.0	0.019	0.000

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A28. Field measurements for samples collected on the Lagrangian trip of May 2000.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Type ²	O	Hd	Temperature	Specific	Dissolved Oxygen
Name		km				cms		J _o	Conductance µS/cm	mg/L
	IROQUOE	SRIVER								
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	7.94	21.5	652	6.3
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	7.94	21.5	652	6.3
IR02	Highway 16 bridge, Ind.	2.0	02/09/00	21:30	Comp.	19.8	7.87	19.9	628	6.3
IR02	Highway 16 bridge, Ind.	2.0	02/00/00	21:30	Grab	19.8	7.87	19.9	628	6.3
IR03	Brook, Ind.	5.9	02/06/00	03:30	Comp.	17.0	7.84	19.0	631	6.1
IR03	Brook, Ind.	5.9	02/09/00	03:30	Grab	17.0	7.84	19.0	631	6.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	7.83	17.3	620	9.9
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	7.83	17.3	620	9.9
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	7.80	17.6	617	8.9
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	7.80	17.6	617	8.9
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	7.77	18.1	621	6.4
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	7.77	18.1	621	6.4
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	7.77	17.6	809	6.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	7.77	17.6	809	6.3
	R (CREEK								
SC01	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39	8.27	21.4	626	10.9
SC02	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	8.08	19.3	636	6.7
SC03	Highway 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	8.06	18.9	636	9.5
SC04	Stateline Rd. bridge, IllInd.	14.0	02/08/00	15:30	Grab	1.06	8.28	22.7	642	0.6
SC05	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	8.20	22.2	639	8.0
SC06	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	8.18	21.7	640	7.1
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	8.11	20.4	610	6.9
SC08	CR 2440E bridge, III.	30.1	02/09/00	08:45	Grab	2.06	8.09	20.3	209	6.9
SC09	Milford, III.	34.4	02/09/00	11:10	Grab	1.95	8.10	20.8	615	7.0
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	8.04	21.0	597	7.5
	SUGAR CREEK	TRIBUT	ARIES							
SCT1	Mud Cr. #1, Ind.	11.7	02/08/00	11:30	Grab	0.38	8.22	21.6	999	6.6
SCT2	Mud Cr. #2, III.	21.2	02/08/00	21:20	Grab	0.33	8.33	21.8	578	7.7
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	7.95	19.5	601	6.2
- late	ni builot are asaft to sucitanelave atelamos	toblo 1								

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A29. Bacterial cell counts and chlorophyll-a concentrations in samples collected on the Lagrangian trip of May 2000. [km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

_o	IROQUOIS RIVER way 55 gage, Ind. 0.0 way 16 bridge, Ind. 2.0 way 16 bridge, Ind. 2.0 x, Ind. 5.9 c, Ind. 5.9	km S RIVER 0.0				smo	Counts	•,
	5 gage, Ind 5 gage, Ind 6 bridge, I	S RIVER 0.0				CIIIS		concentrations
	5 gage, Ind 5 gage, Ind 6 bridge, I	S RIVER 0.0					millions/mL	$\mu g/L$
	way 55 gage, Ind. way 55 gage, Ind. way 16 bridge, Ind. way 16 bridge, Ind. c, Ind. c, Ind.	0.0						
	way 55 gage, Ind. way 16 bridge, Ind. way 16 bridge, Ind. c, Ind. c, Ind.		00/60/50	14:20	Comp.	5.7	na	5.49
	way 16 bridge, Ind. way 16 bridge, Ind. c, Ind. c, Ind.	0.0	02/06/00	14:20	Grab	5.7	na	na
	way 16 bridge, Ind. c, Ind. c, Ind.	2.0	02/06/00	21:30	Comp.	19.8	na	na
	ς, Ind. ς, Ind. 1:00 Pd Ιωίσας Ιωθ	2.0	02/06/00	21:30	Grab	19.8	3.10	na
	k, Ind.	5.9	02/06/00	03:30	Comp.	17.0	na	4.55
		5.9	02/06/00	03:30	Grab	17.0	na	na
		9.4	05/10/00	08:40	Comp.	19.5	3.20	4.80
	lian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	2.50	na
	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	2.80	6.20
	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	na	na
	way 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	na	5.52
	way 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	3.00	na
	on Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	na	na
	on Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	na	na
	SUGAR	CREEK						
SC01 CR 40	CR 400W bridge, Ind.	0.0	00/80/50	13:20	Grab	0.39	na	na
SC02 CR 60	CR 600W bridge, Ind.	4.5	02/08/00	13:45	Grab	0.50	na	na
SC03 Highway	way 71 bridge, Ind.	8.6	02/08/00	10:15	Grab	0.56	na	na
SC04 Stateline	ine Rd. bridge, IIIInd.	14.0	02/08/00	15:30	Grab	1.06	na	na
SC05 CR 30	CR 3000E bridge, III.	17.7	02/08/00	19:15	Grab	1.14	na	na
SC06 CR 28	CR 2800E bridge, III.	21.4	02/08/00	22:40	Grab	1.40	3.50	na
SC07 CR 90	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	na	5.12
_	440E bridge, III.	30.1	02/06/00	08:45	Grab	2.06	1.45	5.23
SC09 Milford,		34.4	02/06/00	11:10	Grab	1.95	na	4.09
SC10 Above M	e Mud Cr. #3, III.	37.8	02/06/00	17:15	Grab	1.92	na	5.30
	SUGAR CREEK	TRIBUTA	ARIES					
SCT1 Mud Cr.	Cr. #1, Ind.	11.7	00/80/50	11:30	Grab	0.38	na	na
SCT2 Mud Cr.	Cr. #2, III.	21.2	00/80/50	21:20	Grab	0.33	1.70	na
SCT3 Unname	med trib., III.	28.5	05/01/00	06:10	Grab	na	na	4.52

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A30. Concentrations of nutrients, dissolved gases, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of September 2001.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	0	NO_3		NO_2		1		Kjeldahl N	N_2O	0	CH_4	
Name		km			cms	mg N/L	Ţ	mg N/L	T	mg N/L	I/L	mg N/L	mg N/L	7/	ηg C	C/L
						Median MAD		Median MAD	MAD	Median MAD	MAD	Value	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER														
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	1.4	0.1		0.001	0.062	0.009	0.58		0.00000	_	0.000
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.1	0.1		0.001	0.10	0.00	09.0		0.00001		0.000
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.0	0.0	0.021	0.001	0.11	0.00	09.0		0.00002	0.035	0.003
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.1	0.1		0.001	0.10	0.00	0.58		0.00000		0.000
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.0	0.1		0.001	0.067	0.008	0.53	0.00053 (0.00002		0.001
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	1:1	0.1	0.011	0.021	0.075	0.005	0.54	0.00065	0.00001	0.032	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.0	0.1	0.026	0.003	0.077	0.012	0.54	0.00058	0.00001	0.026	0.000
	SUGAR CREEK	K														
_ SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	0.29	0.04	0.010	0.000	0.063	0.007	0.34	0.00045 (0.00002	0.011	0.000
SC07	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.98	90.0	0.047	0.001	0.091	900.0	0.30	0.00068	0.00001	0.007	000.0
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	1.1	0.1	0.019	0.000	0.044	0.002	0.22	_	0.00001	0.005	000.0
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/12/01	12:30	0.40	1.2	0.1	0.014	0.000	0.033	0.001	0.25	0.00036	0.00000	_	0.000
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	1.3	0.3	0.012	0.000	< 0.02	0.03	0.25		0.00002	_	000.0
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	1.9	0.1	0.013	0.000	< 0.02	0.01	0.24		0.00000		0.000
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	1.8	0.1	0.011	0.000	0.027	0.019	0.30		0.00000		0.000
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	3.4	0.4	0.016	0.000	< 0.03	0.01	0.30	0.00064	0.00000	0.016	0.000
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^{*}	3.5	0.2	0.016	0.000	0.098	0.017	0.29	0.00054 (0.00000	0.016	0.000
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	3.4	0.1	0.020	0.001	0.062	0.034	0.32	0.00054 (0.00001	0.015	0.000
	SUGAR CREEK TRIBUTARIES	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	1.2	0.1		0.002	< 0.02	0.03	0.32	0.00044 (0.00001	0.009	0.000
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	4.4	0.1	0.028	0.001	< 0.02	na	0.35	0.00065	0.00000		0.000
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	7.6	0.0		0.001	< 0.03	0.01	0.33	0.00063 (0.00001	0.009	0.000

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A30. Concentrations of nutrients, dissolved gases, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

											Suspended
Site	Site Location ¹	Dist. ¹	Date	Time	\circ	PO_4) 4		Ь	DOC	Sediment
Name	_	km			cms	mg P/L	P/L	m	mg/L	mg C/L	mg/L
						Median	MAD	Avg	SD	Avg SD	Value
	IROQUOIS RIVER	/ER									
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.092	0.063	0.130	0.020	6.6 0.1	78
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.044	0.006	0.100	0.010		< >
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.048	0.002	0.110	0.010	7.1 0.1	22
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.048	0.003	0.097	0.015	6.4 0.1	23
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.048	0.012	0.100	0.010	6.6 0.1	37
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^*	0.048	0.016	0.093	0.019	6.4 0.1	33
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.039	0.009	0.096	0.010	6.3 0.1	30
	SUGAR CREEK	${f x}$									
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	< 0.02	0.02	0.018	0.002	4.2 0.3	< 5
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.047	0.037	0.044	0.002	3.2 0.0	< >
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	< 0.02	0.03	0.018	0.002	2.5 0.0	5
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	< 0.02	0.01	0.012	0.001		< 5
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	0.36	0.53	0.007	0.001	3.0 0.0	< > 5
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	< 0.02	0.00	0.010	0.001		9
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	< 0.02	0.01	0.014	0.003	3.5 0.1	5
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	< 0.02	0.03	0.021	0.003	2.9 0.1	15
SC09	Milford, III.	34.4	09/12/01	19:10	.94	0.054	0.008	0.035	0.005	3.4 0.1	16
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	0.11	0.12	0.048	0.002	3.7 0.0	26
	SUGAR CREEK TRIB	TRIBUTARIES	S								
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.02	0.04	0.013	0.003	3.8 0.1	< 5
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	< 0.02	0.03	0.015	0.001	3.5 0.0	< > 5
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	< 0.02	0.05	0.036	0.000	2.5 0.1	S

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A31. Concentrations of major ions in grab samples collected on the synoptic trip of September 2001.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	O	ū		SO_4	H	HCO ₃ + CO ₃	CO ₃	Br	
Name	_	km			cms	mg/L		mg/L		mg C/L	Ţ	µg/L	Ţ
						Avg S	D A	Avg S	D	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER											
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	32 I	na (u 29	na 5	55.1	0.3	13	-
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	29 I	na (n 89	na 5	8.4.8	0.8	14	_
IR03	$\overline{}$	5.9	09/13/01	11:20	1.35	31 I	na (65 n	na 5	54.6	9.0	13	_
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	34	5	99	5	54.2	6.0	14	0
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	35 1	na (62 n	na 5	53.5	0.2	14	_
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	35 1	na (61 n	na 5	50.3	9.0	14	0
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	40 r	na (09	na 5	51.5	0.4	14	_
	SUGAR CREEK	K											
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	21	1 (69	3 5	6.85	0.7	10	0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	17 r	na 8	83 n	na 6	60.7	0.4	11	0
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	16 r	na 10	.07 n	na 6	62.7	0.7	14	0
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	26 r	na 1(108 n	na 6	50.5	1.1	14	0
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	24 r	na 10	108 n	na 5	55.2	0.0	10	7
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	18 r	na 8	n 68	na 5	57.3	0.2	9.5	0.5
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	21	1	88	3 5	0.99	0.5	9.4	1.5
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	20 I	na	72 n	na 5	59.2	0.8	8.6	8.0
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^{*}	22 I	na (68 n	na 5	59.7	0.7	8.9	1.3
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	20 r	na (09 n	na 5	58.6	0.3	8.9	1.5
	SUGAR CREEK TRIBUTARIES	UTARIE	S										
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	33 I	na 🤅	u 86	na 6	62.6	0.3	14	0
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	15	1	20	1 5	54.8	1.0	7.4	1.4
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	20 r	na ,	40 n	na 6	64.0	0.1	8.7	0.0

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A31. Concentrations of major ions in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Q	Na		K	Z	Mg	Ca		SiO_2	2
Name		km			cms	mg/L		mg/L	ш	mg/L	mg/L	Ţ	mg/L	J
						Avg S	Δ	Avg SD	∢	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER												
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	21	7 0	6.9	2 26	0	82	1	12	0
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	17	7 0	4.4 0.0) 25	_	78	5	11	_
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	19	7 0	4.5 0.1	1 25	2	77	5	11	_
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	19	7 0	4.6 0.1	24	П	72	5	11	_
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	20	7	4.4 0.2	2 23	7	72	2	11	_
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	22	7 0	4.3 0.2	22	_	29	4	10	_
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	23	1 2	4.6 0.0) 23	2	89	5	10	1
	SUGAR CREEK	K												
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	14	1	0.1	1 28	1	74	2	11	0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	12	0	2.5 0.1	30	_	80	7	9.2	0.2
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	11	0	2.3 0.0	32	0	88	7	8.7	0.2
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	14	0	.6 0.1		_	96	4	8.8	0.2
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	11	_	2.2 0.1		_	75	_	7.0	0.5
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	11	0	2.3 0.0	30	_	81	2	7.9	0.5
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	11	0	2.5 0.2	31	7	85	4	8.1	0.0
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	9.3 0	0.4	2.2 0.0	31	1	79	α	9.2	0.4
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^{*}	Ξ	-	2.2 0.1	. 31	1	79	4	9.5	0.5
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	11	0 2	3 0.1	. 31	1	78	0	10	1
	SUGAR CREEK TRIB	UTARIES	S											
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	18	1	3 0.1	31	1	63	3	8.6	0.2
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	0 6.9	0.7	2.0 0.1	1 28	7	2	4	8.4	8.0
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	6.2 0	.4	1.5 0.0) 36	1	85	0	11	1

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001.

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	\circ	Al		As		В		Ba		Be		Bi	
Name ¹	_	km			cms	µg/L	,	1/gm	Г	µg/L		µg/L		$\mu g/L$		µg/L	
						Avg	SD	Avg	SD	Avg	Д	Avg S	\sim	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER															
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	< 0.3	8.0	3.1	0.1	100	0	69	2 <	0.05	0.07	< 0.002	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.2	0.1	2.1	0.0	95	∞	9/	4	0.05	0.04	0.002	0.001
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.1	0.1	2.0	0.0	91	∞	72	3 ^	0.05	0.02	< 0.002	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.6	9.0	2.0	0.0	96	9	71	4	0.05	0.01	< 0.002	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.1	0.1	2.0	0.1	95	∞	71	3 <	< 0.05	0.02	< 0.002	0.000
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^*	1.1	0.1	2.0	0.0	94	∞	89	3 ^	0.05	0.02	< 0.002	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.4	0.2	2.0	0.0	93	7	29	v	0.05	0.01	< 0.002	0.001
	SUGAR CREEK	K															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	1.2	0.0	1.7	0.0	98	2	22	1 <	0.03	0.01	< 0.001	0.000
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	1.0	0.2	1.3	0.0	88	κ	54		0.03	0.02	< 0.001	0.000
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	0.4	0.0	1.1	0.0	73	_	51		0.03	0.01	< 0.001	0.000
SC04	Stateline Rd. bridge, IIIInd.	14.0	09/12/01	12:30	0.40	0.3	0.1	1.1	0.0	62	_	28		0.03	0.00	< 0.001	0.001
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	1.0	0.1	1.1	0.1	51	2	53		0.05	0.02	< 0.002	0.000
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	6.0	0.1	1.1	0.0	61	2	20	3 ^	0.05	0.05	0.002	0.000
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	1.8	0.1	1.0	0.0	4	_	49	1 ^	0.05	90.0	< 0.002	0.000
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	98.0	1.2	0.0	1.1	0.0	99	4	47	2 ^	< 0.05	0.03	< 0.002	0.000
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^{*}	1.0	0.0	1.1	0.0	69	9	47	2 <	0.05	0.05	< 0.002	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	1.5	0.2	1.2	0.1	71	9	46	3 <	0.05	0.04	< 0.002	0.001
	SUGAR CREEK TRIBUTARIES	UTARIE	S														
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	9.0	0.0	1.3	0.0	25	1	20	2 <	< 0.03	0.01	< 0.001	0.001
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	1.3	0.1	1.0	0.1	4	7	35		0.05	0.01	< 0.002	0.000
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	1.5	0.1	1.00	0.04	65	9	40	3 <	0.05	0.09	< 0.002	0.000

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	O	Cd		Ce		Co		Cr	
Name 1		km			cms	µg/L		µg/L	د	J/gm	. 1	µg/L	1
						Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	R.											
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	> 0.006	0.005	0.015	0.000	< 0.005	0.017	< 0.3	6.0
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	< 0.006	0.005	0.024	0.001	< 0.005	0.002	< 0.3	0.0
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	< 0.006	0.005	0.022	0.000	0.53	0.02	< 0.3	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	< 0.006	0.004	0.022	0.001	< 0.005	0.014	< 0.3	0.1
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	< 0.006	0.001	0.023	0.001	< 0.005	0.010	< 0.3	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^*	< 0.006	0.002	0.022	0.001	< 0.005	0.008	< 0.3	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	< 0.006	0.003	0.022	0.001	0.094	0.026	< 0.3	0.1
	SUGAR CREEK												
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	< 0.007	0.003	0.023	0.001	< 0.002	0.020	< 0.04	0.03
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	< 0.007	0.002	0.019	0.001	< 0.002	0.031	0.23	0.03
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	< 0.007	0.004	0.012	0.001	< 0.002	0.020	< 0.04	0.02
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	< 0.007	0.003	0.011	0.001	< 0.002	0.014	< 0.04	0.03
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	< 0.006	9000	0.0000	0.0008	< 0.005	0.013	< 0.3	0.1
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	< 0.006	900.0	0.013	0.001	< 0.005	0.020	< 0.3	0.0
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	< 0.006	0.003	0.018	0.001	< 0.005	0.025	< 0.3	0.2
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	< 0.006	0.004	0.021	0.002	< 0.005	0.022	< 0.3	0.0
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94^{*}	< 0.006	0.004	0.018	0.001	< 0.005	0.018	< 0.3	0.1
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	< 0.006	0.005	0.018	0.001	< 0.005	0.015	< 0.3	0.0
	SUGAR CREEK TRIBUTARIES	TARIE	S										
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.007	0.003	0.018	0.000	< 0.002	0.012	< 0.04	0.01
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	< 0.006	0.000	0.015	0.001	< 0.005	0.020	< 0.3	0.1
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	< 0.006	0.003	0.026	0.002	< 0.005	0.016	< 0.3	0.2

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	O	Cs		Cu	_	Dy	ý	Er	٠	Eu	
Name		km			cms	J/gm	,	I/gµ	J	I/gµ	T	I/gµ	Ţ	T/gµ	د
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	3 R													
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	< 0.01	0.01	0.95	0.04	0.0014	0.0009	0.001	0.001	< 0.0008	0.0007
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	< 0.01	0.01	0.91	0.04	0.0050	0.0001	0.004	0.001	< 0.0008	0.0002
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	< 0.01	0.01	0.90	0.02	0.0042	0.0002	0.003	0.001	< 0.0008	0.0011
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	< 0.01	0.01	96.0	0.02	0.0057	0.0016	0.005	0.001	< 0.0008	0.0013
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.02	0.01	96.0	0.04	0.0043	0.0010	0.004	0.001	< 0.0008	0.0014
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	< 0.01	0.01	0.95	0.04	0.0052	0.0007	0.004	0.001	< 0.0008	0.0015
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	< 0.01	0.00	0.97	0.03	0.0047	0.0000	0.005	0.001	< 0.0008	0.0008
	SUGAR CREEK	<u>></u>													
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	< 0.009	0.001	0.59	0.04	0.0038	0.0004	0.003	0.000	< 0.0004	0.0003
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	< 0.009	0.000	0.49	0.04	0.0029	0.0001	0.003	0.000	< 0.0004	0.0007
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	< 0.009	0.004	0.39	0.03	0.0028	0.0002	0.002	0.001	< 0.0004	0.0006
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	< 0.009	0.003	0.58	0.02	0.0035	0.0008	0.002	0.000	< 0.0004	0.0000
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	< 0.01	0.01	0.98	0.05	0.0012	0.0005	< 0.001	0.001	0.0011	0.0011
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	< 0.01	0.01	0.85	0.02	0.0028	0.0008	0.003	0.001	0.0009	0.0016
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	< 0.01	0.01	1.0	0.1	0.0039	0.0005	0.002	0.000	0.0016	0.0018
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	< 0.01	0.01	0.90	0.02	0.0054	0.0003	0.004	0.001	0.0012	0.0013
SC09	Milford, III.	34.4	09/12/01	19:10	0.94	< 0.01	0.00	0.91	0.05	0.0053	0.0006	0.004	0.002	< 0.0008	0.0000
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	< 0.01	0.01	0.92	0.05	0.0050	0.0006	0.004	0.001	< 0.0008	0.0002
	SUGAR CREEK TRIBUTARIES	TARIE	S												
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.009	0.002	69.0	0.05	0.0046	900000	0.003	0.000	< 0.0004	0.0001
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	< 0.01	0.01	1.1	0.1	0.0043	0.0002	0.002	0.001	0.0017	0.0005
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	< 0.01	0.01	0.85	0.09	0.0066	0.0000	0.005	0.002	0.0018	0.0006

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist.	Date	Time	0	Fe		PS		Hg	Ho		La	a		1.1
Name		km			cms	µg/L		µg/L		ng/L	J/gn	د	µg/L	T.	µg/L	T
					7	Avg S)	Avg	SD	Avg SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	ER														
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	14	1 (0.004	0.001	1.3 0.2	0.0004	0.0004	0.010	0.000	0.9	0.3
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	21		0.007	0.001	_	0.0014	0.0002	0.016	0.001	5.7	0.1
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35		_	0.007	0.001	_	0.0012	0.0003	0.013	0.000	5.5	0.3
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	9.8	0.8	0.007	0.001	0.9 0.1	0.0009	0.0004	0.014	0.001	5.6	0.2
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22			2.007	0.001	1.3 0.1	0.0011	0.0003	0.014	0.000	5.7	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	7.7 0	0.6	000.	0.001	1.3 0.1	0.0010	0.0002	0.014	0.000	5.4	0.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	8.1 1)	0.008	0.000	2.7 0.1	0.0011	0.0003	0.014	0.000	5.3	0.2
	SUGAR CREEK	K.														
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	14	1 0.)	0.0005	2.6 0.1	0.0011	0.0002	0.017	0.000	9.9	0.0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	10	1 0.	_	8000.0	_	0.0010	0.0001	0.015	0.000	6.2	0.1
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	13	1 0.	_	0.0004	_	0.0009	0.0001	0.0000	0.0004	6.1	0.0
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	7	0 0.	_	0.0005	_	0.0010	0.0002	0.0079	0.0003	4.8	0.1
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30					0.001	1.3 0.2	< 0.0003	0.0005	0.0060	0.0005	4.8	0.2
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00		4.0 0			0.000	_	0.0008	0.0004	0.0095	0.0004	4.6	0.2
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45					0.001	_	0.0012	0.0001	0.012	0.001	4.5	0.2
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	98.0		0.9	900.0	0.000	2.2 0.1	0.0010	0.0003	0.014	0.001	4.5	0.2
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94^{*}	2.6 0			0.001	1.7 0.1	0.0008	0.0002	0.014	0.001	4.4	0.1
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	6.2 3			0.001	2.1 0.2	0.0012	0.0003	0.014	0.001	4.3	0.2
	SUGAR CREEK TRIBUTARIES	UTARIE	S													
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40		4	1 0.		9000'(1.0 0.0	0.0011	0.0001	0.013	0.001	4.0	0.1
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	4.5 0	0.7	0.004	0.000	1.5 0.1	0.0006	0.0004	0.012	0.000	4.6	0.7
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10					0.000	1.8 0.1	0.0013	0.0002	0.019	0.001	4.7	0.3
							Ì		Ì					Ì	Ì	Ì

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	O	Lu		Mn		Mo		PΝ		ï	_	Pb	
Name ¹		km			cms	Hg/L	Ţ	µg/L		$\mu g/L$	1	µg/L	J	µg/L	Г	µg/L	. 1
						Avg	SD	Avg	$\overline{}$	Avg	0	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	S.R.															
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.0007	0.0003	28	1	4.6 (0.1	600:	0.001	1.4	0.1	< 0.02	0.01
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.0013	0.0003	80	7	4.5 (0.1	.017	0.000	1.4	0.1	90.0	0.02
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.0010	0.0002	98	_	_	0.1 0	.016	0.001	1.6	0.0	0.04	0.01
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.0017	0.0003	98	7	4.5 (0.1	0.015	0.001	1.4	0.1	0.04	0.02
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.0011	0.0003	98	α	_	0.1 0	.018	0.002	1.2	0.1	0.05	0.01
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	0.0012	0.0001	110	0	4.8	0.1 0	0.016	0.000	1.5	0.2	0.05	0.01
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.0011	0.0002	100	0	4.7 (0.0	.018	0.002	1.4	0.1	0.04	0.00
	SUGAR CREEK	>															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50	0.050	0.0003	0.0002	69	1	7.7	0.0	.020	0.002	1.6	0.3	0.08	0.02
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.0005	0.0002	74	7			.016	0.000	1.4	0.5	90.0	0.01
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	0.0005	0.0001	89	_			600:	0.001	1.3	0.2	0.05	0.01
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	0.0005	0.0002	39	_	5.5 (0.0	0.010	0.001	1.2	0.2	0.07	0.02
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	< 0.0005	0.0002	27	_			.007	0.001	8.0	0.0	< 0.02	0.01
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	< 0.0005	0.0003	19	_			.011	0.001	0.8	0.2	< 0.02	0.01
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	< 0.0005	0.0002	19	_			.016	0.001	6.0	0.3	< 0.02	0.01
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	< 0.0005	0.0003	26	_			.019	0.001	9.0	0.1	< 0.02	0.01
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^{*}	< 0.0005	0.0000	22	0	4.1	_	0.018	0.002	8.0	0.2	< 0.02	0.01
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	< 0.0005	0.0001	19	0	4.0 (.019	0.001	6.0	0.0	0.03	0.01
	SUGAR CREEK TRIBUTARIES	TARIE	S														
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.0006		99	2				0.001	1.2	0.4	0.11	0.02
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	< 0.0005		14	_	3.2 (0.1 0	0.016	0.001	0.5	0.1	< 0.02	0.00
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	< 0.0005		22	_		0.1 0		0.000	0.5	0.1	< 0.02	0.01

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

one	Site Location	Dist.	Date	Time	0	Pr	ï	Rb	•	Re	a)	S	Sb	Se	e	Sm	u
Name		km			cms	I/gn	\T	/gn	Ţ	I/an	Ţ	I/gn	/L	μg	T	I/an	Ţ
						Avg	SD	Avg S	SD	Avg	SD	Avg	SD	Avg S	SD	Avg	SD
	IROQUOIS RIVER	ER))))))	
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.0024	0.0003	1.6	0.0	0.012	0.001	0.15	0.00	< 0.8	1.5	< 0.002	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.0040	0.0004	1.5	0.0	0.014	0.001	0.14	0.00	< 0.8	0.5	0.006	0.000
IR03	Brook, Ind.	5.9	09/13/01	11:20		0.0037	0.0001	1.5	0.0	0.015	0.002	0.16	0.01	< 0.8	0.2	0.004	0.000
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.0034	0.0001	1.4	0.0	0.014	0.002	0.16	0.01	0.8	0.5	0.004	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40		0.0038	0.0002	1.3	0.0	0.015	0.001	0.16	0.01	< 0.8	0.8	0.004	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^*	0.0038	0.0002	1.3	0.0	0.012	0.001	0.17	0.00	0.8	0.4	0.004	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.0036	0.0002	1.2	0.0	0.013	0.001	0.18	0.00	0.8	0.1	0.004	0.000
	SUGAR CREEK	K															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:50		0.0043	0.0004	1.1	0.0	0.012	0.001	0.092	0.001	8.0	0.1	0.004	0.001
1 SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50		0.0035	0.0003	1.0	0.0	0.014	0.000	0.11	0.00	0.9		0.003	0.000
2C03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20		0.0021	0.0003	1.0	0.0	0.017	0.001	0.10	0.00	0.8		0.003	0.000
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30		0.0023	0.0001	96.0	0.01	0.019	0.000	0.12	0.00	0.8	0.0	0.004	0.001
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30		0.0016	0.0002	1.0	0.0	0.018	0.002	0.13	0.01	< 0.8		< 0.002	0.002
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00		0.0024	0.0001	0.86	0.03	0.015	0.001	0.12	0.00	< 0.8		0.003	0.001
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45		0.0038	0.0001	0.87	0.03	0.015	0.001	0.13	0.00	< 0.8		0.003	0.001
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	98.0	0.0041	0.0004	0.72	0.02	0.014	0.001	0.12	0.01	< 0.8		0.005	0.001
SC09	Milford, III.	34.4	09/12/01	19:10	.094	0.0038	0.0002	69.0	0.01	0.012	0.001	0.13	0.00	< 0.8	1.1	0.002	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	0.0042	0.0002	0.72	0.02	0.013	0.002	0.12	0.01	< 0.8	1.1	0.005	0.001
	SUGAR CREEK TRIBUTARIES	UTARIE	S														
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40		0.0033	0.0004	98.0		0.020	0.001	0.14	0.00	0.7	0.1	0.005	0.000
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	0.0034	0.0005	0.72	0.01	0.0093	0.0011	0.091	0.004	< 0.8	0.5	0.003	0.001
ST7	Hanamed trib III	28.5	09/12/01	17:10		0.0056	00000	0 38		7,0094	0.0014	0.077	0.004	× 0 ×	<u>τ</u>	000	0.001

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Site Location ¹ Name ¹		Dist. ¹	Date	Time	Q	Sr ug/L		Ta ug/L		dT L/gn		Te ug/I		Th ug/L	h /L	Ti ug/L	
	*****					Avg S	SD	Avg	SD	Avg	SD	Avg	$^{\prime}$ SD	Avg	SD	Avg	SD
IROQUOIS RIVER	ER																
Highway 55 gage, Ind. 0.0 09/13/01 08	09/13/01	_	30	08:30	1.03	340	0	0.018	0.003	< 0.0004	0.0001	< 0.04	0.05	0.0010	0.0003	< 0.3	0.1
Highway 16 bridge, Ind. 2.0 09/13/01 10	09/13/01		<u> </u>	10:05		330	> 0	< 0.006	0.005	0.0008	0.0002	< 0.04	0.01	0.0015	0.0003	< 0.3	0.1
Brook, Ind. 5.9 09/13/01 1	09/13/01		_	11:20		310	> 0		900.0	0.0007	0.0001	< 0.04	0.03	0.0011	0.0001	< 0.3	0.3
Meridian Rd. bridge, Ind. 9.4 09/13/01 12	09/13/01		\vdash	12:30		300	> 0		0.003	0.0005	0.0001	< 0.04	0.02	0.0012	0.0005	< 0.3	0.4
CR 100W bridge, Ind. 12.0 09/13/01 13	09/13/01		13	13:40	1.22	300	> 0	< 0.006	0.003	0.0007	0.0002	< 0.04	0.02	0.0012	0.0004	< 0.3	0.4
Highway 41 bridge, Ind. 16.5 09/13/01 14:1	09/13/01		14	:15	1.26^{*} 2	280	> 0	< 0.006	0.001	0.0007	0.0003	< 0.04	0.02	0.0012	0.0004	< 0.3	0.4
Newton Co. Fairgrounds, Ind. 21.1 09/13/01 1	09/13/01		1	15:20	1.31	270 1	> 0	0.006	0.001	0.0008	0.0002	< 0.04	0.02	0.0012	0.0006	< 0.3	0.4
SUGAR CREEK	Y																
CR 400W bridge, Ind. 0.0 09/12/01 09	09/12/01	_	0	09:20	0.050	310	> 0	0.002	0.000	0.0007	0.0001	< 0.02	0.01	0.0013	0.0002	< 0.2	0.3
CR 600W bridge, Ind. 4.5 09/12/01 09	09/12/01	_	50	09:50		230	> 0	< 0.002	0.001	0.0005	0.0002	0.03	0.02	0.0008	0.0003	< 0.2	0.1
Highway 71 bridge, Ind. 9.8 09/12/01 11	09/12/01		1	11:20		200	> 0	0.002	0.000	0.0006	0.0001	0.03	0.02	0.0006	0.0001	< 0.2	0.1
Stateline Rd. bridge, IllInd. 14.0 09/12/01 12	09/12/01	_	17	12:30		190	> 0	0.002	0.001	0.0007	0.0002	0.03	0.00	0.0008	0.0003	< 0.2	0.1
. 17.7 09/12/01	, 09/12/01	_	$\ddot{-}$	13:30	0.40	180	> 0	900.0	0.003	< 0.0004	0.0001	< 0.04	0.05	0.0005	0.0003	< 0.3	0.4
1. 21.4 09/12/01	09/12/01		15	15:00	· · ·	1.00	> 0	900.0	0.002	0.0006	0.0002	< 0.04	0.03	0.0006	0.0004	< 0.3	0.5
CR 900N bridge, III. 26.9 09/12/01 10	09/12/01		ĭ	16:45	0.63	160 1	> 0	900.0	0.003	0.0005	0.0001	< 0.04	0.03	0.0006	0.0003	< 0.3	0.4
CR 2440E bridge, III. 30.1 09/12/01 1	09/12/01		—	17:30	0.86	091	> 0	0.006	0.003	0.0006	0.0001	< 0.04	0.00	0.0010	0.0001	< 0.3	0.4
SC09 Milford, III. 34.4 09/12/01 19	09/12/01		Ξ	19:10	0.94*]	091	> 0	> 0.006	0.003	0.0007	0.0004	< 0.04	0.05	0.0008	0.0004	< 0.3	0.5
SC10 Above Mud Cr. #3, III. 37.8 09/12/01 19	09/12/01		1	19:40	1.01	160 1	> 0	900.0	0.002	0.0008	0.0001	< 0.04	0.04	0.0009	0.0001	< 0.3	0.4
SUGAR CREEK TRIBUTARIES	JTARIES	Ñ															
Mud Cr. #1, Ind. 11.7 09/12/01 11	09/12/01		11	11:40	0.17	061	> 0	0.002	0.000	0.0007	0.0002	0.03	0.02	900000	0.0001	< 0.2	0.1
SCT2 Mud Cr. #2, III. 21.2 09/12/01 1	09/12/01			14:40		140	> 0]	< 0.006	0.003	< 0.0004	0.0001	< 0.04	0.00	0.0009	0.0005	< 0.3	0.5
SCT3 Unnamed trib., III. 28.5 09/12/01 1	09/12/01		_	17:10			> 01		0.002	0.0007	0.0001	< 0.04	0.03	0.0008	0.0006	< 0.3	9.0

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	\circ	F		Tm		n		>				X	
Name ¹	_	km			cms	I/gµ	Ţ	µg/L	Ţ	$\mu g/L$	Ţ	µg/L		µg/L		µg/L	
						Avg	SD	Avg	SD	Avg	0	Avg S	D Avg	S	Avg	S 2	SD
	IROQUOIS RIVER	3. R															
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	< 0.004	0.002	< 0.0003	0.0001	1.1	0.0	1.0 0	.1 0.9				001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.006	0.003	0.0007	0.0001	1.2	0.0	1.1 0	0.00			_	001
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	< 0.004	0.001	0.0008	0.0001	1.2	0.0	1.1 0	0.0 0.01			_	001
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	< 0.004	0.001	0.0008	0.0002	1.2	0.0	1.2 0	1.1 < 0.005	0.001	0.038	_	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	< 0.004	0.003	0.0009	0.0002	1.2	0.0	1.3 0	.1 0.00			_	100
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^{*}	< 0.004	0.002	0.0007	0.0001	1.1	0.0	1.4 0	0.006	0.002	0.038	_	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	< 0.004	0.003	0.0007	0.0003	1.1	0.0	1.4 0	0.00				001
	SUGAR CREEK	2															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.008	0.001	0.0004	0.0002	1.9	0.0				_		001
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.007	0.001	0.0004	0.0000	2.4	0.0					_	001
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	0.013	0.002	< 0.0003	0.0000	2.6	0.1					_	001
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	0.015	0.002	0.0005	0.0001	2.7					_	_	001
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	0.012	0.002	< 0.0003	0.0002	5.8		0.3 0	0.1 0.006		_	_	001
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	0.013	0.004	0.0004	0.0003	2.3	0.1		V			_	001
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	0.012	0.004	0.0005	0.0002	2.2			V		_	_	001
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	0.009	0.002	0.0005	0.0003	1.9	0.0	•	0.0 < 0.005	0.004	0.050	_	0.001
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94^{*}	0.013	0.006	0.0005	0.0002	1.8	0.0	0.6 0	0.006	0.002	0.048	_	0.001
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	0.012	900.0	0.0004	0.0001	1.7	0.1	_	0.006	_	_	_	003
	SUGAR CREEK TRIBUTARIES	TARIE	Ş														
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.018	900.0	0.0006	0.0002	2.8	0.0		0.0 0.0				001
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	0.006	0.004	0.0003	0.0001	1.3	0.0	0.4 0	0.1 < 0.005	0.002	0.041		0.003
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	0.005	0.005	0.0005	0.0003	1.3			V				001
																	Ī

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; μg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

IROQUOIS IRO1 Highway 55 gage, Ind. IRO2 Highway 16 bridge, Ind. IRO3 Brook, Ind. IRO4 Meridian Rd. bridge, Ind. IRO5 CR 100W bridge, Ind. IRO6 Highway 41 bridge, Ind. IRO7 Newton Co. Fairgrounds, Ind. IRO7 Newton Rd. bridge, Ind. IRO7 SCO1 CR 400W bridge, Ind. SCO2 CR 600W bridge, Ind. SCO3 Highway 71 bridge, Ind. SCO4 Stateline Rd. bridge, III. SCO5 CR 2800E bridge, III. SCO6 CR 2800E bridge, III. SCO6 CR 2440E bridge, III. SCO7 CR 900N bridge, III. SCO9 Milford, III. SCO9 Milford, III. SCO9 Milford, III. SCO1 Above Mud Cr. #3, III. SCT1 Aud Cr. #1, Ind.			Time	\supset	I	χρ	U7	_	Zľ	_
Highwa Highwa Brook, I Meridia CR 100' Highwa Newton CR 400' CR 600' Highwa Stateline CR 300 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800 CR 3000 CR 3000 C	Km			cms	µg/L	T	µg/L	J	J/gµ	\T
Highwa Highwa Brook, I Meridia CR 100' Highwa Newton CR 400' CR 400' CR 2000 CR 2000 CR 2000 CR 2440 Milford, Above M					Avg	SD	Avg	SD	Avg	SD
Highwa, Highwa, Highwa, Brook, I Meridia CR 100' Highwa, Newton CR 400' CR 600' Highwa, Stateline CR 2800 CR 2	IROQUOIS RIVER									
Highwa Brook, I Meridia CR 100' Highwa CR 400' CR 600' Highwa Stateline CR 3000 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800 CR 2800	0.0	09/13/01	08:30	1.03	0.003	0.001	8.0	0.1	0.093	0.003
Brook, I Meridia CR 100' Highwa Newton CR 400' CR 600' Highwa Stateline CR 3000 CR 2800 CR 280	1. 2.0	09/13/01	10:05	1.12	0.007	0.000	8.0	0.3	0.064	0.002
Meridia CR 100' Highwa Newton CR 400' CR 600' Highwa Stateline CR 3000 CR 2800 CR 2800 CR 2440 Milford Above M	5.9	09/13/01	11:20	1.35	0.005	0.000	28	\mathcal{C}	0.063	0.004
CR 100' Highwa, Newton CR 400' CR 600' Highwa, Stateline CR 2800 CR 2800 CR 2800 CR 2444 Milford, Above M	d. 9.4	09/13/01	12:30	1.36	0.007	0.000	8.0	0.1	0.063	0.004
Highwa Newton CR 400 CR 600° Highwa Stateline CR 2800 CR 2800 CR 2900] CR 2440 Milford, Above M	12.0	09/13/01	13:40	1.22	0.006	0.000	1.1	0.3	0.064	0.003
CR 400' CR 600' CR 600' Highwa: Stateline CR 3000 CR 2800 CR 2800 CR 2440 Milford, Above M	16.5	09/13/01	14:15	1.26^{*}	0.007	0.001	5.2	0.2	0.064	0.001
CR 400 CR 6000' Highwa, Stateline CR 3000 CR 2800 CR 2440 Milford, Above M	s, Ind. 21.1	09/13/01	15:20	1.31	0.006	0.000	1.2	0.4	0.079	0.020
CR 400' CR 600' Highwa, Stateline CR 3000 CR 2800 CR 2800 CR 2444 Milford, Above M	SUGAR CREEK									
CR 600' Highwa' Stateline CR 3000 CR 2800 CR 2900] CR 2444 Milford, Above M	0.0	09/12/01	09:20	0.050	0.0027	0.0003	1.1	0.3	0.047	0.003
Highwa Stateline CR 3000 CR 2800 CR 900] CR 2440 Milford, Above M	4.5	09/12/01	09:50	0.077	0.0026	0.0002	1.6	0.3	0.031	0.002
Stateline CR 3000 CR 2800 CR 9001 CR 2444 Milford, Above M	1. 9.8	09/12/01	11:20	0.15	0.0023	0.0003	6.0	0.1	0.027	0.002
CR 3000 CR 2800 CR 9001 CR 2440 Milford, Above N	Ind. 14.0	09/12/01	12:30	0.40	0.0031	0.0004	1.1	0.2	0.032	0.000
CR 2800 CR 9001 CR 2440 Milford, Above N	17.7	09/12/01	13:30	0.40	< 0.002	0.001	0.7	0.3	0.027	0.003
CR 2900] CR 244(Milford, Above Mud Cr.	21.4	09/12/01	15:00	0.55	0.003	0.000	9.0	0.0	0.036	0.001
CR 2440 Milford, Above M	26.9	09/12/01	16:45	0.63	0.003	0.000	< 0.4	0.2	0.19	0.02
Milford, Above Mud Cr.	30.1	09/12/01	17:30	0.86	0.004	0.001	0.7	0.4	0.038	0.003
Above Mud Cr.	34.4	09/12/01	19:10	0.94^{*}	0.004	0.001	0.5	0.2	0.037	0.001
Mud Cr.	37.8	09/12/01	19:40	1.01	0.004	0.000	1.0	0.3	0.034	0.003
	SUGAR CREEK TRIBUTARIES	S								
	11.7	09/12/01	11:40	0.17	0.0035	0.0003	6.0	0.1	0.042	0.002
SCT2 Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	0.003	0.000	0.5	0.0	0.034	0.004
SCT3 Unnamed trib., III.	28.5	09/12/01	17:10	0.16	0.003	0.000	2.1	6.0	0.035	0.003

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A33. Field measurements for samples collected on the synoptic trip of September 2001.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Highway 55 ga Highway 16 bri Brook, Ind. Meridian Rd. br CR 100W bridg Highway 41 bri Newton Co. Fai CR 400W bridg CR 400W bridg CR 2800E bridg CR 2800E bridg CR 2800E bridg CR 2440E bridg CR 2460E bridg	IROQUOIS RIVER ge, Ind. dge, Ind.	km 0.0							
	(d. nd.				cms		ွ	Conductance	mg/L
	. d. nd.							uS/cm	
	Ind. e, Ind. ge, Ind.	0.0							
	e, Ind. ge, Ind.	•	09/13/01	08:30	1.03	8.2	19.3	675	8.9
	ge, Ind.	5.0	09/13/01	10:05	1.12	8.1	19.5	629	6.5
	ge, Ind.	5.9	09/13/01	11:20	1.35	8.1	19.9	629	5.4
		9.4	09/13/01	12:30	1.36	8.0	21.1	654	6.2
	Ind.	12.0	09/13/01	13:40	1.22	na	na	na	na
	e, Ind.	16.5	09/13/01	14:15	1.26^{*}	na	na	na	na
	rounds, Ind.	21.1	09/13/01	15:20	1.31	7.90	22.4	642	5.9
	SUGAR CREEK								
	Ind.	0.0	09/12/01	09:50	0.050	na	na	na	na
	Ind.	4.5	09/12/01	09:50	0.077	na	na	na	na
	e, Ind.	8.6	09/12/01	11:20	0.15	na	na	na	na
CR 300C CR 280C CR 2900 CR 244C Milford, Above N	ge, IIIInd.	14.0	09/12/01	12:30	0.40	na	na	na	na
CR 2800 CR 9001 CR 2440 Milford, Above N	III.	17.7	09/12/01	13:30	0.40	na	na	na	na
CR 9000 CR 2440 Milford, Above N	III.	21.4	09/12/01	15:00	0.55	8.04	21.4	929	9.6
CR 2440 Milford, Above N	III.	26.9	09/12/01	16:45	0.63	8.05	23.6	<i>L</i> 99	7.6
Milford, Above N	III.	30.1	09/12/01	17:30	98.0	8.0	22.5	099	8.6
Above N		34.4	09/12/01	19:10	.94	8.0	20.3	663	7.8
	3, 111.	37.8	09/12/01	19:40	1.01	8.0	21.0	629	7.5
	CREEK TRIBUTARIES	FARIE	S						
SCT1 Mud Cr. #1, Ind.		11.7	09/12/01	11:40	0.17				
SCT2 Mud Cr. #2, III.		21.2	09/12/01	14:40	0.11	8.09	22.3	594	10.2
SCT3 Unnamed trib., III.		28.5	09/12/01	17:10	0.16	8.0	20.1	675	8.6

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A34. Bacterial cell counts and chlorophyll-a concentrations in grab samples collected on the synoptic trip of September 2001. [km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Q	Bacterial Cell	Chlorophyll- a
Name		km			cms	Counts	concentrations
						millions/mL	µg/L
	IROQUOIS RIVER	ER					
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	2.10	6.07
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.89	5.69
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.67	6.56
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.35	8.89
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.57	8.66
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26^*	1.81	9.85
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.13	13.6
	SUGAR CREEK	K					
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	1.31	3.85
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	96.0	4.13
SC03	Highway 71 bridge, Ind.	8.6	09/12/01	11:20	0.15	1.12	4.78
SC04	Stateline Rd. bridge, IllInd.	14.0	09/12/01	12:30	0.40	69.0	3.40
SC05	CR 3000E bridge, III.	17.7	09/12/01	13:30	0.40	96.0	3.06
SC06	CR 2800E bridge, III.	21.4	09/12/01	15:00	0.55	1.15	3.25
SC07	CR 900N bridge, III.	26.9	09/12/01	16:45	0.63	0.77	2.65
SC08	CR 2440E bridge, III.	30.1	09/12/01	17:30	0.86	0.84	1.80
SC09	Milford, III.	34.4	09/12/01	19:10	0.94^*	0.90	3.13
SC10	Above Mud Cr. #3, III.	37.8	09/12/01	19:40	1.01	0.87	2.06
	SUGAR CREEK TRIBUTARIES	UTARIE	S				
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.27	4.79
SCT2	Mud Cr. #2, III.	21.2	09/12/01	14:40	0.11	1.51	2.38
SCT3	Unnamed trib., III.	28.5	09/12/01	17:10	0.16	0.34	na

¹ More complete explanations of these are found in table 1.

^{*} These values are estimates.

Table A35. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of April 2002.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

High High High High High CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 2 CR 2 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1	IROQUOIS RIVER gage, Ind. bridge, Ind.		LOCATION	745	Time	0	NO3		NO_2	2	$^{\dagger}_{\rm HN}$	₽	Kjeldahl N
High High High High High CR 1: CR 1: CR 1: CR 1: CR 1: CR 2: CR 2: CR 2: CR 3: CR 4: CR 4: CR 1: CR 1:	IROQUOIS RIVER gage, Ind. bridge. Ind.	km				cms	mg N/L	ر	mg N/L	Z/L	mg N/L	N/L	mg N/L
High High High High Brool Meric CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 3 CR 2 CR 4 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1	IROQUOIS RIVER gage, Ind. gage, Ind. bridge, Ind.						Median MAD Median	\mathbb{A}	Median	MAD	Median	MAD	Value
High High High High Meric CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 3 CR 4 CR 4 CR 4 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1	gage, Ind. gage, Ind. bridge, Ind.												
High High High Brool Meric CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 3 CR 2 CR 4 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1	gage, Ind. bridge, Ind.	0.0	COF	04/03/02	11:05	36.8	8.5	0.1	0.020	0.001	0.039	0.001	0.65
High Brool Meric CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 3 CR 2 CR 3 CR 3 CR 4 CR 3 CR 6 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1 CR 1	bridge, Ind.	0.0	Backwater	04/03/02	12:20	36.8	8.9	0.2	0.022	0.001	0.043	0.003	0.63
Brool Meric CR 1: CR 2: High High Newt Righ Statel CR 3: CR 3: CR 3: CR 3: CR 3: Mud	0	2.0	COF	04/03/02	09:50	43.9	8.6	0.2	0.020	0.001	0.035	0.001	0.61
Merica Merica CR 1: CR 4: CR 4: CR 6: CR 6: CR 6: CR 3: CR 2: CR 2		5.9	COF	04/03/02	13:20	44.7	8.4	0.2	0.020	0.002	0.038	0.002	0.59
CR 1 CR 1 CR 1 CR 1 CR 1 High Newt High Statel CR 3 CR 3 CR 3 CR 3 CR 3 CR 3 CR 3 CR 3	. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	8.9	0.1	0.026	0.001	0.035	0.000	0.56
CR 10 CR 11 CR 11 CR 11 CR 41 Newt High Statel CR 32 CR 22 CR 23 CR 24 CR 24 C	idge, Ind.	12.0	COF	04/03/02	14:25	47.0	8.8	0.2	0.027	0.000	0.034	0.001	0.46
CR 1 CR 1 CR 1 CR 1 High CR 4 CR 6 High Statel CR 3 CR 2 CR 9 CR 9	idge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	9.5	0.1	0.023	0.001	0.031	0.005	0.70
CR 1 CR 1 CR 1 High Newt CR 6 High Statel CR 3 CR 2 CR 2 CR 9	idge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	9.5	0.1	0.021	0.000	0.033	0.007	0.55
CR 1 CR 1 High Newt Newt CR 4 CR 6 High Statel CR 3 CR 3 CR 2 CR 2 Mulf Mud	idge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	9.5	na	0.020	0.000	0.035	0.003	0.55
High Newt High Newt CR 4 CR 4 CR 6 High Statel CR 3 CR 2 CR 2 CR 9 CR 9 CR 9 CR 9 CR 9 CR 9	idge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	9.3	0.2	0.021	0.001	0.034	0.002	0.75
High Newt CR 4 CR 6 High Statel CR 3 CR 2 CR 2 CR 9 CR 9	idge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	9.3	0.0	0.020	0.002	0.032	0.003	0.58
CR 4 CR 6 High Statel CR 3 CR 2 CR 9 CR 9 CR 9 CR 9	bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.6	0.2	0.028	0.000	0.031	0.001	0.58
CR 4 CR 6 High Statel CR 3 CR 2 CR 9 CR 9 CR 9	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	8.9	0.1	0.027	0.000	0.029	0.004	0.56
CR 4 CR 6 High Statel Statel CR 3 CR 2 CR 2 CR 2 CR 9 CR 9 CR 2	SUGAR CREEK												
CR 6 High Statel CR 3 CR 2 CR 2 CR 9 CR 9 Milfc	idge, Ind.	0.0	COF	04/04/02	08:30	1.25	8.8	0.2	0.013	0.002	0.021	0.001	0.25
High Statel CR 3 CR 2 CR 9 CR 9 CR 2 Milfo	idge, Ind.	4.5	COF	04/04/02	08:55	2.24	8.8	0.1	0.006	0.000	0.031	0.003	0.26
Statel CR 3 CR 2 CR 9 CR 2 Milfo	bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	8.8	0.0	0.007	0.000	0.020	0.003	0.24
CR 2 CR 2 CR 9 CR 2 Milfo	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	8.3	0.0	0.013	0.001	0.023	0.001	0.22
CR 2 CR 9 CR 2 Milfo	idge, III.	17.7	COF	04/04/02	10:50	5.41	8.2	0.0	0.014	0.000	0.022	0.004	0.21
CR 2 CR 2 Milfo	idge, III.	21.4	COF	04/04/02	11:40	6.63	8.7	0.0	0.005	0.001	0.019	0.004	0.22
CR 2 Milfo	dge, III.	26.9	COF	04/04/02	12:50	7.08	9.8	0.0	0.005	0.001	0.019	0.002	0.21
Milfo	idge, III.	30.1	COF	04/04/02	13:00	8.64	8.9	0.1	0.006	0.000	0.019	0.002	0.22
Mud		34.4	COF	04/04/02	13:40	9.83	8.8	0.2	0.008	0.000	0.031	0.008	0.21
	SUGAR CREEK TRIBUTARIES	RIES											
	Ind.	11.7	COF	04/04/02	09:50	2.13	8.4	0.1	0.007	0.000	0.022	0.003	0.20
SCT2 Mud Cr. #2, III	III.	21.2	COF	04/04/02	11:15	1.29	11.0	0.2	0.006	0.001	0.019	0.003	0.16
SCT3 Unnamed trib., III.	b., III.	28.5	COF	04/04/02	12:10	0.61	12.3	0.4	0.009	0.001	0.027	0.004	0.18

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A35. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

												Suspended
Site	Site Location ¹	Dist. ¹	Location	Date	Time	0	PO_4	_	P		DOC	Sediment
Name	_	km				cms	mg P/L	T	L/gm	Γ	mg C/L	mg/L
							Median MAD	MAD	Avg	SD	Avg SD	Value
	IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.03	0.02	0.058	0.002	6.06 0.14	6
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.03	0.00	0.045	0.004	6.05 0.08	8
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	90.0	0.00	0.045	0.000	5.84 0.13	6
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.05	0.01	0.048	0.003	5.59 0.20	9
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.05	0.00	0.046	0.007		5
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.05	0.00	0.051	0.004		< > 5
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.04	0.01	0.053	0.002		5
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.04	0.01	0.046	0.003	5.22 0.02	14
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	90.0	0.01	0.047	0.002	5.27 0.06	10
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.05	0.00	0.044	0.003	5.49 0.01	6
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.04	0.00	0.043	0.000	5.39 0.10	8
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	< 0.02	0.03	0.054	0.003	5.18 0.01	9
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.08	0.01	0.053	0.002	5.40 0.02	8
	SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.04	0.01	0.015	0.001	2.55 0.10	22
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.03	0.00	0.018	0.002	2.56 0.01	16
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	0.03	0.00	0.012	0.003	2.27 0.11	18
SC04	Stateline Rd. bridge, IIIInd.	14.0	COF	04/04/02	10:25	5.15	0.04	0.01	na	na	2.37 0.11	17
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	0.04	0.00	0.008	0.003	2.34 0.05	16
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.03	0.00	0.009	0.001	2.20 0.03	18
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.02	0.00	0.009	0.000	2.03 0.10	24
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.02	0.01	0.009	0.002	2.27 0.03	20
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.02	0.01	0.013	0.003	2.42 0.04	24
	SUGAR CREEK TRIBUT	FARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.02	0.02	< 0.008	0.002	2.37 0.10	12
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	< 0.02	0.00	< 0.008	0.002	2.05 0.05	∞
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	0.02	0.01	0.009	0.001	1.81 0.04	~

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A36. Concentrations of major ions in grab samples collected on the synoptic trip of April 2002.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Name	Site	Site Location ¹	Dist. ¹	Location	Date	Time	0	C		SO_4	HCC	$HCO_3 + CO_3$)3	Br		
Highway 55 gage, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 55 gage, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 55 gage, Ind. Highway 16 bridge, Ind. Highway 14 bridge, Ind. Highway 17 b	Name		km				cms	mg/L		mg/L		ng C/L		µg/L	Ţ	
Highway 55 gage, Ind. 100 Backwater 04/03/02 12:20 56.8 26 0 52 1 42.1 0.4 Highway 16 bridge, Ind. 20 COF 04/03/02 12:20 56.8 26 0 52 1 42.1 0.4 Highway 16 bridge, Ind. 20 COF 04/03/02 13:25 54.4 25 1 50 1 41.1 0.9 Brook, Ind. 210 COF 04/03/02 13:25 54.4 25 2 50 0 40.4 1.0 0.9 Brook, Ind. 211 COF 04/03/02 13:25 54.4 25 2 50 0 42.1 0.5 0.9 0.0 d.														Avg	SD	
Highway 55 gage, Ind. O Backwater O COF O O O O O O O O O O O O O O O O O O		2														
Highway 55 gage, Ind. O. Backwater 04/03/02 12:20 36.8 26 0 52 1 42.1 0.4 Highway 55 gage, Ind. E.O. COF 04/03/02 13:55 54.4 25 1 50 1 41.1 0.9 Meridiam Rd, bridge, Ind. ER 100W bridge, Ind. CR 200E bridge, Ind. CR 40W bridge, Ind. CR 40W bridge, Ind. CR 50W bridge, Ind. CR 50W bridge, Ind. CR 60W bridge, Ind. CR 60W bridge, Ind. CR 60W bridge, Ind. CR 70W bridge, Ind. CR 70W bridge, Ind. CR 70W bridge, Ind. CR 80W bridge, Ind. CR 90W bri	IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	25 (_	48 8	0 39.	4.	1.2	8.5	1.2	
Highway 16 bridge, Ind. Brook,	IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	76 (52	1 42.	Ξ.	0.4	9.1	0.8	
Brook, Ind. Brook	IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	25 (50	0 40.	4.	1.0	7.4	0.2	
Meridian Rd. bridge, Ind. CR 100W bridge, Ind. 12.0 Gm LEW Q4/03/02 15:05 47:0 25 0 50 0 42.5 0.9 CR 100W bridge, Ind. 12.0 6m LEW Q4/03/02 15:05 47:0 25 0 50 0 42.5 0.9 CR 100W bridge, Ind. 12.0 34m LEW Q4/03/02 15:05 47:0 25 0 49 1 43.1 0.1 CR 100W bridge, Ind. 12.0 34m LEW Q4/03/02 15:00 47:0 25 0 49 1 43.1 0.1 CR 100W bridge, Ind. 12.0 70m LEW Q4/03/02 15:00 47:0 25 0 49 0 49.3 0.7 CR 100W bridge, Ind. 12.0 70m LEW Q4/03/02 15:00 47:0 25 0 49 0 42.9 1.2 Highway 41 bridge, Ind. 12.0 70m LEW Q4/03/02 15:00 47:0 25 0 49 0 42.9 1.2 CR 00W bridge, Ind. 12.0 70m LEW Q4/03/02 15:00 47:0 25 0 49 0 42.9 1.2 Highway 71 bridge, Ind. CR Q0W bridge, Ind. 12.0 70m LEW Q4/03/02 16:00 51:0 55 0 49 0 42.9 0.2 CR Q0W bridge, Ind. 12.0 70m LEW Q4/03/02 16:00 51:0 55 0 49 0 42.9 0.2 CR Q0W bridge, Ind. 12.0 70m LEW Q4/04/02 10:55 51.5 17 1 40 0 47.4 0.5 CR 2800E bridge, III. 17.7 COF Q4/04/02 10:55 51.1 18 1 55 1 51.1 0.7 CR 2800E bridge, III. 21.4 COF Q4/04/02 12:50 708 19 0 52 1 51.1 0.7 CR 2800E bridge, III. 21.4 COF Q4/04/02 12:0 708 19 0 52 1 51.1 0.7 CR 200N bridge, III. 21.4 COF Q4/04/02 12:0 708 19 0 52 1 51.1 0.7 CR 200N bridge, III. 21.4 COF Q4/04/02 12:0 708 19 0 53 10 51.1 0.7 CR 200N bridge, III. 21.4 COF Q4/04/02 12:0 708 19 0 53 10 51.1 0.7 CR 200R bridge, III. 21.5 COF Q4/04/02 13:00 864 19 0 51 15.1 0.7 CR 20GR CR EEK TRIBUTARIES Mud CT. #2.III. Mud CT. #2.III. 21.7 COF Q4/04/02 13:00 98.3 19 0 50 1 51.1 0.7 CR 30.00 50:	IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	25		20	1 41.	1.	6.0	8.1	6.0	
CR 100W bridge, Ind. CR 400W bridge, Ind. CR 50 COF 04/03/02 16:30 53.5 25 0 49 0 42.9 0.42.9 0.42.9 0.42.0 0.40.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	25 2		20	0 42.	.1	0.5	7.8	0.4	
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47:0 24 0 48 1 42.6 0.1 CR 100W bridge, Ind. 12.0 12m LEW 04/03/02 15:05 47:0 25 0 49 1 43.1 0.1 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:05 47:0 25 0 49 1 43.1 0.1 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:07 25 0 49 1 43.4 0.7 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47:0 25 0 49 0 42.9 1.2 Highway 41 bridge, Ind. 21.1 COF 04/03/02 16:03 53.5 2 0 49 0 42.0 0.6 Newton Co. Fairgrounds, Ind. 21.1 COF 04/04/02 08:35 1.25 17 1 40 0 42.5 CR 400W bridge, Ind. 4.5 COF 04/04/02 08:35 1.25 17 1 40 0 42.5 CR 3000E bridge, Ind. 4.5 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 3000E bridge, Ind. 17.7 COF 04/04/02 10:25 5.15 18 1 55 1 51.1 0.7 CR 200E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2400E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 1 51.1 0.7 CR 2400E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 1 51.1 0.7 CR 2400E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 1 51.1 0.7 CR 2400E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 1 51.1 0.7 CR 2400E bridge, III. 21.5 COF 04/04/02 13:00 8.64 19 0 51 1 51.1 0.7 CR 240E bridge, III. 21.5 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.5 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.6 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.7 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.8 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.9 COF 04/04/02 13:00 8.64 19 0 50 1 51.1 0.7 CR 240E bridge, III. 22.9 COF 04/04/02 13:00 0 60 0 60 0 60 0 60 0 60 0 60 0 60	IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	25 (_	20	0 42.	5.	6.0	8.1	9.0	
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0	IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	24 (_	48	1 42.	9:	0.7	7.8	0.3	
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 26 na 50 na 43.7 0.7 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 26 0 49 1 43.4 0.7 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 25 1 48 0 42.9 1.2 Highway 41 bridge, Ind. 12.1 COF 04/03/02 16:30 53.5 25 0 49 0 42.5 0.4 0.6 CR 400W bridge, Ind. 12.1 COF 04/03/02 16:30 53.5 25 0 49 0 42.5 0.4 0.6 CR 400W bridge, Ind. 12.1 COF 04/03/02 16:30 53.5 25 0 49 0 42.5 0.4 0.6 CR 600W bridge, Ind. 12.1 COF 04/04/02 08:35 2.24 17 1 42 0 48.4 0.3 CR 600W bridge, Ind. 14.0 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 300E bridge, III. Ind. 13.4 COF 04/04/02 12:50 7.08 19 0 53.0 6 0.1 CR 200E bridge, III. 13.4 COF 04/04/02 13:00 8.3 19 0 50.0 1 51.1 0.7 10.0 10.0 10.0 10.0 10.0 10.0 10	IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	25 (_	49	1 43.	.1	0.1	7.8	0.3	
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:00 47:0 25 1 48 0 49.9 1.2 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:00 51.0 25 0 49 0 42.9 1.2 Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. 4.5 COF 04/03/02 16:30 51.5 25 0 49 0 42.5 0.4 CR 400W bridge, Ind. CR 400W bridge, Ind. 4.5 COF 04/04/02 08:30 1.25 17 1 40 0 47.4 0.5 Stateline Rd. bridge, Inl. 14.0 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 Stateline Rd. bridge, Ill. CR 2800E bridge, Ill. CR 2800E bridge, Ill. CR 2800E bridge, Ill. CR 2400W bridge, Ill. CR 2400W bridge, Ill. CR 2400W bridge, Ill. CR 2800E bridge, Ill. CR 2800E bridge, Ill. CR 2800E bridge, Ill. SUGAR CREEK TRIBUTARIES Muld Cr. #1, Ind. Mud Cr. #1, Ind. Mud Cr. #2, Ill. CR 2805 COF 04/04/02 12:10 0.5 1 58 1 58.1 0.7 Mulmamed trib, Ill. 28.5 COF 04/04/02 12:10 0.6 1 58.0 0.4 04/04/02 13:10 0.6 1 58.0 0.4 04/04/02 13:40 0.8 1 58.1 1 58.1 1 51.0 04/04/02 13:40 0.8 1 1 58.1 1 58.1 1 51.0 Numamed trib, Ill. 28.5 COF 04/04/02 12:10 0.6 1 13.6 0.4 0.4 0.6 0.8 0.7 1.0 04/04/02 13:10 0.6 1 13.6 0.7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0			_		7.	0.7	8.0	0.5	
CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:0 47.0 25 1 48 0 42.9 1.2 1.2 Highway 41 bridge, Ind. 16.5 COF 04/03/02 16:30 53.5 25 0 49 0 42.0 0.0 OA Newton Co. Fairgrounds, Ind. 21.1 COF 04/03/02 16:30 53.5 25 0 49 0 42.0 0.0 CR 400W bridge, Ind. 0.0 COF 04/04/02 08:35 2.24 17 1 40 0 48.4 0.3 Righway 71 bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 17 46 0 48.9 0.4 Stateline Rd. bridge, III. 17.7 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 0 42.9 0.4 0 42.0 0 42.0 0 42.0 0 42.0 0 42.0 0 4	IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0		_	49	1 43.	4.	0.7	8.2	9.0	
Highway 41 bridge, Ind. SUGAR CREEK SUGAR CREEK SUGAR CREEK SUGAR CREEK SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. A 5 COF 04/04/02 08:55 2.24 17 1 40 0 47.4 0.5 0.4 8.9 0.4 9.8 COF 04/04/02 09:15 2.76 17 1 46 0 48:9 0.4 8.9 0.4 8.9 0.4 8.9 0.4 04/04/02 10:25 5.15 18 1 53 0 49:9 1.3 0.7 CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2400E bridge, III. CR 240CE bridge, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. CR 240CE bridge, III. CR 240CE bridge, I	IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	25	_	48	0 42.	6:	1.2	8.3	0.5	
SUGAR CREEK SUGAR CREEK SUGAR CREEK 0.0 COF 04/04/02 08:35 2.5 5 9 49 0 42.5 0.4 CR 400W bridge, Ind. 0.0 COF 04/04/02 08:55 2.24 17 1 40 0 47.4 0.5 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 17 1 40 0 47.4 0.5 CR 600W bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 17 1 40 0 48.9 0.4 Stateline Rd. bridge, III. 17.7 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 2800E bridge, III. 26.9 COF 04/04/02 11:40 6.63 19 0 53.1 0.1 51.1 0.7 CR 2800E bridge, III. 30.1 COF 04/04/02 12:0 708 1 <td>IR06</td> <td>Highway 41 bridge, Ind.</td> <td>16.5</td> <td>COF</td> <td>04/03/02</td> <td>16:00</td> <td>51.0</td> <td>25 (</td> <td>_</td> <td>49</td> <td>0 42.</td> <td>0:</td> <td>9.0</td> <td>8.7</td> <td>1.3</td>	IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	25 (_	49	0 42.	0:	9.0	8.7	1.3	
SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 17 1 40 0 47.4 0.5 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 17 1 42 0 48.4 0.3 Highway 71 bridge, Ind. 9.8 COF 04/04/02 10:25 5.15 18 1 53 0 48.9 0.4 Stateline Rd. bridge, III. 17.7 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2800E bridge, III. 26.9 COF 04/04/02 12:50 7.08 19 0 53 0 50.6 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 13:40 9.83 19 0 50	IR07	' '	21.1	COF	04/03/02	16:30	53.5	25 (49	0 42.	.5	0.4	7.7	9.0	
CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 17 1 40 0 47.4 0.5 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 17 1 46 0 48.4 0.3 Highway 71 bridge, Ind. 9.8 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 3000E bridge, III. 17.7 COF 04/04/02 10:26 5.41 18 1 53 0 49.9 1.3 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2800E bridge, III. 26.9 COF 04/04/02 12:50 7.08 19 0 53 0 50.6 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 13:40 9:83 19 0 50 1 51.1 0.1 </td <td></td> <td>SUGAR CREEK</td> <td></td>		SUGAR CREEK														
CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 17 1 42 0 48.4 0.3 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 17 1 46 0 48.9 0.4 Stateline Rd. bridge, III. 14.0 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 18 1 55 1 51.1 0.7 CR 2800E bridge, III. 26.9 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2800E bridge, III. 30.1 COF 04/04/02 13:00 8.64 19 0 53.6 0.1 0.1 CR 2440E bridge, III. 34.4 COF 04/04/02 13:40 9.83 19 0 51 51.7 0.1 <td colsp<="" td=""><td>SC01</td><td>CR 400W bridge, Ind.</td><td>0.0</td><td>COF</td><td>04/04/02</td><td>08:30</td><td>1.25</td><td>17]</td><td>_</td><td>40</td><td>0 47.</td><td></td><td>0.5</td><td>5.3</td><td>0.2</td></td>	<td>SC01</td> <td>CR 400W bridge, Ind.</td> <td>0.0</td> <td>COF</td> <td>04/04/02</td> <td>08:30</td> <td>1.25</td> <td>17]</td> <td>_</td> <td>40</td> <td>0 47.</td> <td></td> <td>0.5</td> <td>5.3</td> <td>0.2</td>	SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	17]	_	40	0 47.		0.5	5.3	0.2
Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 17 1 46 0 48.9 0.4 Stateline Rd. bridge, IIIInd. 14.0 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 3000E bridge, IIIInd. 17.7 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2800E bridge, III. 26.9 COF 04/04/02 12:50 7.08 19 0 53 0 50.6 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 13:40 8.64 19 0 51 1 51.7 0.1 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:15 1.29 20 0 40 50 50 1 51.1 0.7 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.1 0.7	SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	17	_	42	0 48.		0.3	5.9	0.4	
Stateline Rd. bridge, IIIInd. 14.0 COF 04/04/02 10:25 5.15 18 1 53 0 49.9 1.3 CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 18 1 55 1 51.1 0.7 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 12:50 7.08 19 0 52 1 51.5 0.1 Milford, III. 30.1 COF 04/04/02 13:40 9.83 19 0 50 1 51.1 0.7 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. Mud Cr. #1, Ind. 11.7 COF 04/04/02 12:15 20 40 0 50 1 53.1 0.7 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 19 1 53.6 1.0	SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	17	_	46			0.4	6.3	0.0	
CR 3000E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2400E bridge, III. CR 2440E bridge, III. 30.1 COF 04/04/02 12:50 7.08 19 0 52 1 51.5 0.1 CR 2440E bridge, III. 34.4 COF 04/04/02 13:40 9.83 19 0 50 1 51.1 0.7 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. II.7 COF 04/04/02 09:50 2.13 21 1 58 1 53.1 0.7 Mud Cr. #2, III. COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC04	111	14.0	COF	04/04/02	10:25	5.15	18	_	53			1.3	na	na	
CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 19 0 53 0 50.6 0.1 CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 19 0 52 1 51.5 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 19 0 51 1 51.7 0.1 Milford, III. 34.4 COF 04/04/02 13:40 9.83 19 0 50 1 51.1 0.7 Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:40 9.83 19 0 50 1 53.1 0.7 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	18	_	55			0.7	8.9	0.1	
CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 19 0 52 1 51.5 0.1 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 19 0 51 1 51.7 0.1 Milford, III. 34.4 COF 04/04/02 13:40 9.83 19 0 50 1 51.1 0.7 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 20 0 40 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63			53			0.1	7.1	0.8	
CR 2440E bridge, III. 30.1 COF 04/04/02 13:40 8.64 19 0 51 1 51.7 0.1 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 03:50 2.13 21 1 58 1 53.1 0.7 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08			52	1 51.		0.1	6.9	0.0	
Milford, III. 34.4 COF 04/04/02 13:40 9.83 19 0 50 1 51.1 0.7 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 21 1 58 1 53.1 0.7 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	19 (51	1 51.		0.1	6.5	0.0	
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 21 1 58 1 53.1 0.7 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	19 ((50	1 51.		0.7	7.1	0.8	
Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 21 1 58 1 53.1 0.7 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0		RIBUT	ARIES													
Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 20 0 40 0 50.7 1.0 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	06:60	2.13	21 1		89	1 53.	.1	0.7	7.5	0.3	
Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 19 1 36 1 53.6 1.0	SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	20 (_	40	0 50.	.7		9.9	0.2	
	SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	19	_	36	1 53.	9:		7.2	0.5	

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A36. Concentrations of major ions in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	0	Na	_	K		Mg		Ca		SiO_2	5
Name		km				cms	mg/L	Γ	mg/L	Ţ	-		_		50	. 1
	GERRAL DECLES						Avg	SD	Avg	SD	Avg	SD '	Avg	SD /	Avg	SD
	IROQUOIS KIVER															
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	7.8	0.1	2.4	0.0	70	0	29	-	5.3).1
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	8.2	0.2	2.1	0.0	70	0	69	_).1
IR 02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	8.1	0.0	2.2	0.0	70	0	69	0		0.0
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	7.9	0.1	2.2	0.1	20	0	70	-	6.2 ().1
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	8.0	0.3	2.1	0.1	21	0	71	0).1
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	8.0	0.1	2.1	0.0	21	0	70	1).1
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	7.4	0.2	2.3	0.0	20	0	70	1	6.2 ().1
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	7.4	0.3	2.0	0.0	50	0	69	0).1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	8.1	0.3	2.0	0.0	21	0	71	0	6.4	0.0
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	7.4	0.3	1.9	0.0	50	_	70	_	6.1).1
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	7.8	0.3	2.1	0.2	20	0	69	0	6.2 ().1
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	7.8	0.1	2.1	0.0	21	0	71	0).1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	7.6	0.2	2.1	0.1	20	0	69	1 (5.2 ().1
	SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	4.9	0.3	66.0	0.01	22	0	69	, 0	7.4 ().1
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	5.2	0.2	1.0	0.0	23	0	71	,).1
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	4.8	0.1	1.0	0.1	23	0	72	` O	7.4	0.0
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na	na	na		na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	5.6	0.2	1.0	0.1	25	0	9/	0).1
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	5.5	0.1	0.97	0.04	56	0	75	0).1
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	5.3	0.2	1.0	0.0	76	0	75	-).1
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	5.0	0.1	96.0	0.03	76	0	74	-	6.9).1
SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	5.9	0.2	1.0	0.0	26	0	74	, 0	7.1 (0.0
	SUGAR CREEK TRIBUT	ARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	6.9		68.0	0.07	76	0	80	1 ().1
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	4.4	0.2	0.81	90.0	28	0	71	0	6.1	0.0
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	4.4		92.0	90.0	56	0	71	` O		0.1

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

IROQUOIS RIVER	Site	Site Location ¹	Dist. ¹	Location	Date	Time	\circ	Al		As	s s	В		Ba		Be	
Highway 55 gage, Ind. Highway 15 gage, Ind. Highway 15 gage, Ind. Highway 15 gage, Ind. Highway 15 gage, Ind. Highway 16 bridge, Ind. LOOP GAVGNOZ 12:20 36.8 3.9 0.7 0.48 0.04 Highway 16 bridge, Ind. LOOP GAVGNOZ 12:20 36.8 3.9 0.7 0.48 0.01 0.02 0.00 0.04 0.00 0.00 0.00 0.00 0.00	Name	_	km				cms	/gµ		μg		$\mu g/L$		-		µg/L	
Highway 55 gage, Ind. O COF 04/03/02 11:05 36.8 3.9 0.7 0.48 0.04 Highway 16 bridge, Ind. 2.0 COF 04/03/02 13:20 36.8 3.9 0.7 0.48 0.04 Highway 16 bridge, Ind. 2.0 COF 04/03/02 13:20 34.7 3.6 0.1 0.48 0.01 Brook, Ind. Meridian Rd, bridge, Ind. CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:55 54.4 2.9 0.1 0.51 0.02 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:50 47.0 2.8 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.2 0.48 0.03 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.00 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.00 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 47.0 0.2 0.0 0.48 0.00 CR 100W bridge, Ind. 12.0 Tom LEW 04/03/02 15:00 51.0 0.47 0.02 Newton Co. Farigrounds, Ind. 21.1 COF 04/04/02 08:30 12.5 1.0 0.47 0.02 CR 400W bridge, Ind. 4.5 COF 04/04/02 08:30 12.5 1.0 0.0 0.39 0.01 Stateline Rd bridge, III. 17.7 COF 04/04/02 10:20 5.41 1.1 0.1 0.3 0.00 CR 3000 bridge, III. 21.4 COF 04/04/02 12:00 0.00 0.39 0.01 Stateline Rd bridge, III. 21.4 COF 04/04/02 12:00 0.00 0.00 CR 2440E bridge, III. 30.1 COF 04/04/02 12:00 0.00 0.00 CR 2440E bridge, III. 30.1 COF 04/04/02 12:00 0.00 0.00 CR 2400E bridge, III. 30.1 COF 04/04/02 13:40 9.83 0.89 0.02 0.41 0.00 Millord, III. 30.1 COF 04/04/02 12:00 0.00 0.00 CR 200 04.00 CR								Avg	SD	Avg	SD	Avg	Ω	Avg S	SD	Avg	SD
Highway 55 gage, Ind. OD Backwater 04/03/02 12:20 36.8 5.4 0.1 0.50 0.02 Highway 55 gage, Ind. OD Backwater 04/03/02 12:20 36.8 3.9 0.7 0.48 0.04 Highway 16 bridge, Ind. SOOF 04/03/02 13:20 44.7 3.0 0.1 0.48 0.01 Meridian Rd. bridge, Ind. CR 100W bridge, Ind. 12.0 COF 04/03/02 13:20 47.0 3.0 0.1 0.51 0.02 CR 100W bridge, Ind. 12.0 COF 04/03/02 15:20 47.0 3.0 0.1 0.52 0.01 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.8 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:06 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:06 47.0 2.9 0.2 0.48 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:06 47.0 2.9 0.2 0.48 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:06 47.0 3.1 0.0 0.45 0.01 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:06 1.0 2.9 0.1 0.47 0.02 Newton Co. Fairgrounds, Ind. 12.0 70m LEW 04/03/02 15:06 51.0 2.9 0.1 0.47 0.00 CR 00W bridge, Ind. 14.0 COF 04/04/02 08:35 2.4 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 14.0 COF 04/04/02 10:25 5.15 na		IROQUOIS RIVEF	R														
Highway 55 gage, Ind. 9.0 Backwater 04/03/02 12:20 36.8 3:9 0.7 0.48 0.04 Highway 16 bridge, Ind. 2.0 COF 04/03/02 13:25 44.7 3.6 0.1 0.47 0.02 Brook, Ind. Meritian Rd bridge, Ind. 2.0 COF 04/03/02 13:55 54.4 2.9 0.1 0.51 0.02 CR 100W bridge, Ind. 12.0 COF 04/03/02 13:55 54.0 3.0 0.1 0.52 0.01 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.8 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:07 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:07 47.0 2.8 0.0 0.48 0.02 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:07 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:09 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:09 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:09 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 14.0 COF 04/04/02 08:35 2.4 0.86 0.02 CR 200M bridge, Ind. 14.0 COF 04/04/02 08:35 2.4 0.86 0.02 CR 200M bridge, Ind. 17.7 COF 04/04/02 10:25 5.15 na	IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	5.4	0.1	0.50	0.02	25	0	43	0	600.0	0.001
Highway 16 bridge, Ind. Brook, Ind. Brook, Ind. Brook, Ind. Brook Ind. CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 6m LEW 04/03/02 13:25 47.0 3.0 0.1 0.55 0.00 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.9 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:05 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:07 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 400W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 400W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.00 CR 400W bridge, Ind. 12.0 70m LEW 04/03/02 16:07 53.5 1.3 0.1 0.47 0.00 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 4.5 COF 04/04/02 10:55 5.15 na na na na CR 3000E bridge, III. 17.7 COF 04/04/02 10:55 5.15 na	IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	3.9	0.7	0.48	0.04	26	_	43	_	0.007	0.008
Brook, Ind. Meridian Rd. bridge, Ind. ER 100W bridge, Ind. CR 100W bridge, Ind. CR 100W bridge, Ind. CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 COF 04/03/02 15:55 54.4 2.9 0.1 0.51 0.02 CR 100W bridge, Ind. 12.0 6m LEW 04/03/02 15:05 47.0 2.8 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:00 47.0 2.8 0.0 0.48 0.00 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:00 47.0 2.9 0.2 0.48 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.9 0.0 0.48 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.9 0.1 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.9 0.1 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.9 0.1 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.9 0.1 0.47 0.00 CR 400W bridge, Ind. 21.1 COF 04/03/02 15:00 53.0 2.9 0.1 0.47 0.00 CR 600W bridge, Ind. 21.2 COF 04/04/02 10:25 1.3 0.1 0.41 0.02 CR 500W bridge, Ind. 21.4 COF 04/04/02 10:26 5.41 1.1 0.1 0.3 0.3 0.38 CR 2800E bridge, III. 20.9 COF 04/04/02 10:26 5.41 1.1 0.1 0.3 0.3 0.38 CR 240E bridge, III. 20.9 COF 04/04/02 10:26 5.41 0.1 0.1 0.3 0.3 0.3 CR 240E bridge, III. 20.9 COF 04/04/02 10:26 5.41 0.1 0.1 0.3 0.3 0.3 CR 240E bridge, III. 20.9 COF 04/04/02 10:26 0.84 0.89 0.03 0.42 0.02 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.86 0.03 0.41 0.02 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.86 0.03 0.04 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.80 0.03 0.03 0.04 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.04 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 11:00 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.0 04/04/02 11:00 0.03 0.03 0.03 0.03 0.03 CR 240E bridge, III. 20.0 04/04/02 11:00 0.03 0.03 0.03 0.03 0.03 CR 240E bridge, III.	IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	3.8	0.0	0.47	0.02	26	_	43	0	0.010	900.0
Meridian Rd. bridge, Ind. CR 100W bridge, Ind. 12.0 COF 04/03/02 14:25 54.4 2.9 0.1 0.51 0.02 CR 100W bridge, Ind. 12.0 For 04/03/02 15:05 47.0 2.9 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:09 2.9 0.2 0.48 0.03 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:09 47.0 2.9 0.2 0.48 0.03 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:09 47.0 2.9 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:09 47.0 2.9 0.0 0.45 0.01 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:09 2.9 0.1 0.47 0.02 Newton Co. Fairgrounds, Ind. 12.1 COF 04/03/02 15:09 51.0 2.9 0.1 0.47 0.00 CR 600W bridge, Ind. 12.1 COF 04/04/02 08:35 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 12.1 COF 04/04/02 08:35 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 12.1 COF 04/04/02 10:25 5.15 na na na na CR 3000 Bridge, III. 12.1 COF 04/04/02 10:25 5.41 1.1 0.1 0.39 0.01 CR 200N bridge, III. 20.9 COF 04/04/02 10:26 5.41 1.1 0.1 0.39 0.02 CR 240E bridge, III. 20.9 COF 04/04/02 10:26 5.41 1.1 0.1 0.39 0.03 CR 240E bridge, III. 20.9 COF 04/04/02 10:26 0.86 0.02 0.40 0.03 CR 240E bridge, III. 30.1 COF 04/04/02 12:09 0.86 0.03 0.83 0.80 CR 240E bridge, III. 30.1 COF 04/04/02 12:00 0.80 0.03 0.80 0.03 CR 240E bridge, III. 30.1 COF 04/04/02 12:00 0.80 0.03 0.80 0.03 Milford, III. SUGAR CREEK TRIBUTARIES NMud Cr. #1, Ind. 28.5 COF 04/04/02 12:15 1.29 0.76 0.05 0.06 0.01 COF 04/04/02 12:15 1.29 0.76 0.05 0.05 0.01 COF 04/04/02 12:10 0.01 0.03 0.05 0.05 0.01 COF 04/04/02 12:10 0.00 0.03 0.00 0.03 0.00 0.03 0.00 0.03 0.00	IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	3.6	0.1	0.48	0.01	56	_	4	0	0.008	0.002
CR 100W bridge, Ind. CR 20M CR 20M CR 20M CR 20M CR 20M CR 20M CR 400W bridge, Ind. CR 400W bridge, Ind. CR 400W bridge, Ind. CR 400W bridge, Ind. CR 600W bridge, Ind. CR 20M bridge, Ind. CR 600W bridge, Ind. CR 600W bridge, Ind. CR 600W bridge, Ind. CR 600W bridge, Ind. CR 70M CR 70M CR 600M CR 70M CR 70M CR 70M CR 70M CR 70M CR 70M CR 70M CR	IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	2.9	0.1	0.51	0.02	27	_	43	0	900.0	0.005
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.8 0.1 0.50 0.00 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:05 47.0 2.9 0.2 0.48 0.02 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:07 47.0 2.8 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.3 0.45 0.01 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:07 47.0 3.1 0.0 0.45 0.01 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 16:07 2.9 0.1 0.47 0.02 OR 04/03/02 I6:09 1.25 1.3 0.1 0.47 0.02 OR 04/03/02 I6:09 0.1 0.47 0.02 OR 04/03/02 III. 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	3.0	0.1	0.52	0.01	27	_	43	· 0	< 0.005	0.002
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0	IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	2.8	0.1	0.50	0.00	26	0	45	0	0.005	0.003
CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 2.8 0.0 0.48 0.03 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 3.1 0.0 0.45 0.00 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 3.1 0.0 0.45 0.00 CR 400W bridge, Ind. 12.1 COF 04/03/02 16:30 53.5 2.6 0.1 0.47 0.00 SUGAR CREEK TRIBUTARIES CR 2000 bridge, III. 12.0 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 CR 2000 bridge, III. 12.0 COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	12.0	17mLEW	04/03/02	15:20	47.0	2.9	0.2	0.48	0.02	27	_	45	0	0.008	0.002
CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47:0 3.1 0.3 0.45 0.00 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47:0 3.1 0.0 0.45 0.01 Highway 41 bridge, Ind. 12.1 COF 04/03/02 15:00 47:0 3.1 0.0 0.45 0.01 Newton Co. Fairgrounds, Ind. 21.1 COF 04/03/02 16:30 53.5 2.6 0.1 0.47 0.00 SUGAR CREEK CR 400W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 0.92 0.00 0.39 0.01 Stateline Rd. bridge, III. CR 3000E bridge, III. 17.7 COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	2.8	0.0	0.48	0.03	27	_	45	<u></u>	< 0.005	0.004
CR 100W bridge, Ind. Highway 41 bridge, Ind. 15.0 70m LEW 04/03/02 15:00 47.0 3.1 0.0 0.45 0.01 Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 400W bridge, Ind. CR 500W bridge, Ind. Stateline Rd. bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2400W bridge, III. CR 2800E bridge, III. CR 2400W bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2400W bridge, III. CR 2400W bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2800E bridge, III. CR 2400E bridge, III. CR 240C 04/04/02 12:50 7.08 0.95 0.03 0.42 0.00 0.40 0.40 0.40 0.40 0.40 0.40	IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	3.1	0.3	0.45	0.00	26	0	45	0	0.010	900.0
Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. CR 500W bridge, Ind. CR 50W	IR05	CR 100W bridge, Ind.	12.0	$70 \mathrm{m} \mathrm{LEW}$	04/03/02	15:00	47.0	3.1	0.0	0.45	0.01	26	0	45	0	0.009	0.00
SUGAR CREEK 21.1 COF 04/03/02 16:30 53.5 2.6 0.1 0.47 0.00 SUGAR CREEK SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:35 2.24 0.86 0.02 0.40 0.01 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 9.8 COF 04/04/02 08:55 2.24 0.86 0.02 0.04 0.01 Stateline Rd. bridge, III. 17.7 COF 04/04/02 10:25 5.15 na na na CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 900N bridge, III. 30.1 COF 04/04/02 13:40 9.83 0.89 0.03 0.38 0.00 CR 2440E bridge, III. 34.4 COF 04/04/02 13	IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	2.9	0.1	0.47	0.02	27	_	43	· 0	< 0.005	900.0
SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:35 1.25 1.3 0.1 0.41 0.02 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 0.92 0.00 0.39 0.01 Stateline Rd. bridge, Ill. 17.7 COF 04/04/02 10:25 5.15 na na na CR 2800E bridge, Ill. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 2800E bridge, Ill. 26.9 COF 04/04/02 12:50 7.08 0.95 0.05 0.41 0.02 CR 2440E bridge, Ill. 30.1 COF 04/04/02 13:00 8.64 0.89 0.03 0.42 0.02 Milford, Ill. 34.4 COF 04/04/02 13:00 8.64 0.89 0.03	IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	2.6	0.1	0.47	0.00	27	1	41	0	0.005	0.001
CR 400W bridge, Ind. CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. Stateline Rd. bridge, III. Stateline Rd. bridge, III. CR 3000E bridge, III. CR 2800E bridge, III. COF 04/04/02 12:50 7.08 0.95 0.03 0.41 0.02 CR 2440E bridge, III. A14.4 COF 04/04/02 13:40 9.83 0.89 0.03 0.42 0.01 CR 2440E bridge, III. COF 04/04/02 13:40 9.83 0.89 0.03 0.42 0.01 Mud Cr. #1, Ind. COF 04/04/02 12:51 0.051 1.10 0.01 0.35 0.00		SUGAR CREEK															
CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.86 0.02 0.40 0.01 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 0.92 0.00 0.39 0.01 Stateline Rd. bridge, III. 17.7 COF 04/04/02 10:25 5.15 na na na na CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 1.1 0.1 0.39 0.03 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 2440E bridge, III. 30.1 COF 04/04/02 12:50 7.08 0.95 0.05 0.41 0.02 Milford, III. 30.1 COF 04/04/02 13:40 9.83 0.89 0.02 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:40 9.83 <	SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	1.3	0.1	0.41	0.02	24	1	41		< 0.005	0.005
Highway 71 bridge, Ind. Stateline Rd. bridge, Ind. Stateline Rd. bridge, IIIInd. CR 3000E bridge, IIIInd. CR 2800E bridge, III. CR 280E bridge, III. CR 2800E bridge, III. CR 280E bridge	SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	98.0	0.02	0.40	0.01	26	7		· 0	< 0.005	0.003
Stateline Rd. bridge, IIIInd. 14.0 COF 04/04/02 10:25 5.15 na na na na CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 1.1 0.1 0.39 0.03 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 0.89 0.05 0.41 0.02 Milford, III. 34.4 COF 04/04/02 13:40 9.83 0.89 0.02 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:40 9.83 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	0.92	0.00	0.39	0.01	25	_	41	0	0.005	900.0
CR 2800E bridge, III. 17.7 COF 04/04/02 10:50 5.41 1.1 0.1 0.39 0.03 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 2800E bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.95 0.05 0.41 0.02 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 0.89 0.03 0.42 0.02 Milford, III. 34.4 COF 04/04/02 13:40 9.83 0.89 0.03 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na		na	na	na
CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 0.80 0.03 0.38 0.00 CR 2900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.95 0.05 0.41 0.02 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 0.89 0.03 0.42 0.02 Milford, III. 34.4 COF 04/04/02 13:40 9.83 0.89 0.02 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Unnamed trib. III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	1.1	0.1	0.39	0.03	24	_		0	0.015	0.000
CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.95 0.05 0.41 0.02 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 0.89 0.03 0.42 0.02 Milford, III. 34.4 COF 04/04/02 13:40 9.83 0.89 0.02 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.80	0.03	0.38	0.00	56	_	38	0	0.009	0.002
CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 0.89 0.03 0.42 0.02 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.95	0.05	0.41	0.02	56	0	37	0	< 0.005	900.0
Milford, III. 34.4 COF 04/04/02 13:40 9.83 0.89 0.02 0.43 0.01 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	68.0	0.03	0.42	0.02	26	_	36		0.009	0.000
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Unnamed trib III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	0.89	0.02	0.43	0.01	27	1	36	> 0	< 0.005	0.006
Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 0.91 0.07 0.37 0.03 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Umaned trib., III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00		SUGAR CREEK TRIBUT	FARIES														
Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.76 0.05 0.26 0.01 Umamed trib. III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.91	0.07	0.37	0.03	20	0	45	> 0	< 0.005	0.007
Unnamed trib. III. 28.5 COF 04/04/02 12:10 0.61 1.1 0.0 0.36 0.00	SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	92.0	0.05	0.26	0.01	26	0	56		< 0.005	0.004
	SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	1.1	0.0	0.36	0.00	28	0	27	0	< 0.005	0.004

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Name	Site	Site Location ¹	Dist. ¹	Location	Date	Time	ð	Bi		Cd		Ce	
Highway 55 gage, Ind	Name	1	km				cms	I/gn		I/gn	,	/gn	J
Highway 55 gage, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 19 bridge, Ind. Highway 19 bridge, Ind. Highway 19 bridge, Ind. Highway 11 bridg									-	Avg			SD
Highway 55 gage, Ind. O Backwater (4,03702 11:05 36.8 0.0022 0.0031 < 0.0009 0.001 COP Highway 55 gage, Ind. O Backwater (4,03702 12:03 68.8 0.0022 0.0019 < 0.0009 0.002 Brook, Ind. Brook, Ind. Meridian Rd. bridge, Ind. S O COF (4,04702 12:03 68.8 0.0023 0.0024 < 0.0099 0.0001 CR 1000 bridge, Ind. S O COF (4,04702 13:55 54.4 0.0034 0.0020 0.0009 0.0001 CR 1000 bridge, Ind. CR 100W bridge, Ind. 12.0 Gord (4,03702 13:55 54.4 0.0034 0.0020 0.0009 0.0001 CR 100W bridge, Ind. 12.0 Gord (4,03702 13:55 54.4 0.0034 0.0037 0.0009 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 47.0 0.0014 0.0015 0.0009 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 47.0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 47.0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 47.0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 47.0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:05 15:0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:00 12:0 0.0004 0.0005 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,03702 15:0 15:0 15:0 0.0014 0.0015 0.0004 0.0002 0.0002 0.0002 CR 100W bridge, Ind. 12.0 fom LEW (4,04702 08:55 2.24 0.0008 0.0006 0.0009 0.0002 CR 2000 0.0002 0.		IROQUOIS RIVER											
Highway 55 gage, Ind. 10.0 Backwater 94/03/02 12:20 36.8 0.0022 0.0019 < 0.0002 0.0022 Highway 16 bridge. Ind. 2.0 COF 04/03/02 13:55 54.4 0.0027 0.0020 0.0020 0.0012 CR 100W bridge. Ind. 12.0 COF 04/03/02 13:55 54.4 0.0023 0.0020 0.0010 0.0011 CR 100W bridge. Ind. 12.0 COF 04/03/02 13:55 54.4 0.0034 0.0020 0.0009 0.0011 CR 100W bridge. Ind. 12.0 GmLEW 04/03/02 15:50 47.0 0.0011 0.0004 0.0009 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:50 47.0 0.0001 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 36m LEW 04/03/02 15:00 47.0 0.0009 0.0007 0.0009 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 36m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.0002 CR 100W bridge. Ind. 12.0 34m LEW 04/03/02 15:00 47.0 0.0009 0.0001 0.0002 0.	IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.0022	0.0031	< 0.009	0.001	0.039	0.001
Highway 16 bridge, Ind. Brook, Ind. Brook, Ind. Brook, Ind. Brook Ind. Br	IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.0022	0.0019	< 0.009	0.002	0.033	0.001
Brook, Ind. Brook, Ind. Meridian Rd, bridge, Ind. CR 100W bridge, Ind. 12.0 COFF 04/03/02 13:55 544 0.0024 0.0020 0.0001 CR 100W bridge, Ind. 12.0 Gm.LEW 04/03/02 15:29 47.0 0.0011 0.0004 0.0002 CR 100W bridge, Ind. 12.0 17m.LEW 04/03/02 15:20 47.0 0.0011 0.0004 0.0002 CR 100W bridge, Ind. 12.0 17m.LEW 04/03/02 15:20 47.0 0.0011 0.0004 0.0002 CR 100W bridge, Ind. 12.0 34m.LEW 04/03/02 15:20 47.0 0.0014 0.0009 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 15:20 47.0 0.0009 0.0007 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 15:00 47.0 0.0009 0.0007 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 15:00 47.0 0.0009 0.0007 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 15:00 0.0001 0.0005 0.0009 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 16:00 16:00 0.0001 0.0001 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 16:00 16:00 0.0001 0.0001 0.0002 CR 100W bridge, Ind. 12.0 70m.LEW 04/03/02 16:00 16:00 0.0001 0.0001 0.0002 CR 400W bridge, Ind. 12.0 70m.LEW 04/03/02 16:00 10:001 0.0001 0.0001 0.0002 CR 600W bridge, Ind. 13.1 COF 04/04/02 08:35 2.24 0.0021 0.0015 0.0009 CR 8000E bridge, III. Ind. 14.1 COF 04/04/02 10:25 5.15 na	IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.0035	0.0034	< 0.009	0.002	0.035	0.001
CR 100W bridge, Ind. 9.4 COF 04/03/02 13:55 54.4 0.0034 0.0020 < 0.009 0.001 CR 100W bridge, Ind. 12.0 COF 04/03/02 15:05 47.0 0.0053 0.0020 < 0.009	IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.0027	0.0020	< 0.009	0.001	0.033	0.001
CR 100W bridge, Ind. 12.0 COF 04/03/02 15:05 47:0 0.0053 0.0037 <0.009 0.000 CR 100W bridge, Ind. 12.0 6m LEW 04/03/02 15:05 47:0 0.0011 0.0004 <0.009 0.000 CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:04 47:0 0.0009 0.0007 <0.009 0.0002 CR 100W bridge, Ind. 12.0 3m LEW 04/03/02 15:04 47:0 0.0009 0.0005 <0.009 0.0002 CR 100W bridge, Ind. 12.0 3m LEW 04/03/02 15:04 47:0 0.0009 0.0005 <0.009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:00 47:0 0.0009 0.0005 <0.009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:00 47:0 0.0009 0.0005 <0.009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:00 47:0 0.0009 0.0005 <0.009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:00 51:0 0.0041 0.0013 <0.009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 16:0 51:0 0.0041 0.0013 <0.009 0.0002 CR 400W bridge, Ind. 12.0 7m LEW 04/03/02 16:0 51:0 0.0041 0.0013 <0.009 0.0002 CR 600W bridge, Ind. 12.0 7m LEW 04/04/02 08:35 2.24 0.0001 0.0015 <0.009 0.0002 CR 600W bridge, Ind. 12.0 7m LEW 04/04/02 10:2 5.15 na na na na na na CR 3000 cR 5000 cR 5000 0.0001 CR 2800E bridge, III. 17.7 COF 04/04/02 11:40 6.3 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 17.7 COF 04/04/02 13:00 8.4 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 17.7 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 17.1 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 26.9 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 26.9 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 26.9 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 27.1 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0001 CR 2800E bridge, III. 28.5 COF 04/04/02 13:0 8.64 <0.0008 0.0001 <0.009 0.0003 COF 04/04/02 13:0 8.64 <0.0008 0.0001	IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.0034	0.0020	< 0.009	0.001	0.026	0.001
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:05 47.0 0.0011 0.0004 <0.0009 0.000 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:20 47.0 0.0014 0.0015 <0.0009 0.0002 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 0.0009 0.0007 <0.0009 0.0002 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:30 47.0 0.0009 0.0007 <0.0009 0.0001 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:30 47.0 0.0009 0.0001 <0.0009 0.0001 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:30 47.0 0.0009 0.0001 <0.0009 0.0001 CR 100W bridge, Ind. 12.0 7m LEW 04/03/02 15:30 8.35 0.0031 0.0013 <0.0009 0.0001 CR 100W bridge, Ind. 12.0 04/03/02 16:30 8.35 0.0031 0.0013 <0.0009 0.0002 CR 100W bridge, Ind. 12.0 04/04/02 08:30 1.25 <0.0008 0.0001 <0.0009 0.0002 CR 100W bridge, Ind. 12.1 COF 04/04/02 08:35 2.24 0.0011 0.0015 <0.0009 0.0002 CR 100W bridge, Ind. 12.1 COF 04/04/02 08:35 2.24 0.0001 <0.0009 0.0002 CR 100W bridge, III. 12.1 COF 04/04/02 08:35 2.0008 0.0001 <0.0009 0.0002 CR 100W bridge, III. 12.1 COF 04/04/02 08:30 0.0008 0.0001 <0.0009 0.0001 CR 100W bridge, III. 12.1 COF 04/04/02 13:00 0.001 <0.0009 0.0001 CR 100W bridge, III. 22.0 COF 04/04/02 13:00 0.001 <0.0009 0.0001 CR 10W bridge, III. 22.0 COF 04/04/02 13:00 0.001 <0.0009 0.0001 CR 10W bridge, III. 22.1 COF 04/04/02 13:00 0.001 <0.0009 0.0001 CR 10W bridge, III. 22.2 COF 04/04/02 13:00 0.0008 0.0001 <0.0009 0.0001 CR 10W bridge, III. 22.2 COF 04/04/02 13:00 0.0008 0.0001 <0.0009 0.0001 CR 10W bridge, III. 22.2 COF 04/04/02 13:10 0.0018 0.0010 0.0009 0.0000 0.0000 CR 10W bridge, III. 22.3 COF 04/04/02 13:10 0.0008 0.0018 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.	IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.0053	0.0037	< 0.009	0.002	0.027	0.002
CR 100W bridge, Ind. CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 0.0004 0.0007 < 0.009 0.002 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 0.0009 0.0007 < 0.009 0.002 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 15:00 47.0 0.0009 0.0007 < 0.009 0.001 Highway 41 bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 0.0009 0.0005 < 0.009 0.001 Newton Co. Fairgrounds, Ind. 12.1 COF 04/03/02 16:00 51.0 0.0041 0.0013 < 0.009 0.002 CR 400W bridge, Ind. 12.1 COF 04/03/02 16:00 53.5 0.0031 0.0013 < 0.009 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:35 2.24 0.0008 0.0006 < 0.009 0.002 CR 600W bridge, Ind. 14.0 COF 04/04/02 09:15 2.76 < 0.0008 0.0005 < 0.009 Stateline Rd. bridge, III. Ind. 14.1 COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.0011	0.0004	< 0.009	0.000	0.024	0.001
CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 0.0009 0.0007 < 0.0009 0.0002 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 0.0009 0.0005 < 0.0009 0.0001 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 0.0009 0.0005 < 0.0009 0.0001 Highway 41 bridge, Ind. 21.1 COF 04/03/02 16:30 53.5 0.0031 0.0013 < 0.0009 0.0002 CR 600W bridge, Ind. 21.1 COF 04/04/02 08:35 2.24 0.0021 0.0015 < 0.009 0.0002 CR 600W bridge, Ind. 4.5 COF 04/04/02 08:35 2.24 0.0021 0.0015 < 0.009 0.0002 CR 3000E bridge, III. Ind. 14.0 COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	12.0	17mLEW	04/03/02	15:20	47.0	0.0014	0.0015	< 0.009	0.002	0.025	0.001
CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 0.0009 0.0005 < 0.009 0.001 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 0.0020 0.0016 < 0.009	IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.0009	0.0007	< 0.009	0.002	0.027	0.001
CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 0.0020 0.0016 < 0.002 0.002	IR05	CR 100W bridge, Ind.	12.0	$50 \mathrm{m} \mathrm{LEW}$	04/03/02	14:50	47.0	0.0009	0.0005	< 0.009	0.001	0.029	0.001
Highway 41 bridge, Ind. SUGAR CREEK SUGAR CREEK CR 400W bridge, Ind. SUGAR CREEK CR 600W bridge, Ind. SOC COF 04/04/02 08:35 5.24 0.0031 0.0013 <0.009 0.002 CR 04/04/02 08:55 2.24 0.0021 0.0015 <0.009 0.002 CR 04/04/02 08:55 2.24 0.0021 0.0015 <0.009 0.002 CR 04/04/02 08:55 2.24 0.0021 0.0015 <0.009 0.002 CR 04/04/02 09:15 2.76 <0.0008 0.0006 <0.009 0.002 CR 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	12.0	$70 \mathrm{m} \mathrm{LEW}$	04/03/02	15:00	47.0	0.0020	0.0016	< 0.009	0.002	0.027	0.001
SUGAR CREEK COF 04/03/02 16:30 53.5 0.0031 0.0013 < 0.009 0.002 SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 < 0.0008 0.0000 < 0.009 0.002 CR 400W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.0021 0.0015 < 0.009 0.002 Highway 71 bridge, Ind. 4.5 COF 04/04/02 09:15 2.76 < 0.0008 0.0005 < 0.009 0.002 CR 3000E bridge, III. 17.7 COF 04/04/02 10:25 5.15 na na na na CR 2000E bridge, III. 17.7 COF 04/04/02 11:40 6.63 < 0.0008 0.0001 < 0.009 0.000 CR 2440E bridge, III. 26.9 COF 04/04/02 13:00 8.64 < 0.0008 0.0001 < 0.009 0.000 Milford, III. 30.1 COF 04/04/02 13:40 9.83 < 0.0008	IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.0041	0.0031	< 0.009	0.001	0.025	0.001
SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 < 0.0000	IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.0031	0.0013	< 0.009	0.002	0.025	0.001
CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 < 0.0008 0.0000 < 0.009 0.000 CO CO CA/04/02 08:55 2.24 0.00021 0.0015 < 0.009 0.000 CO 0.000 CO 0.000 < 0.009 0.000 < 0.009 0.000 CO 0.000 CO 0.000 < 0.009 0.000 CO 0.000		SUGAR CREEK											
CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 0.0021 0.0015 < 0.009 0.002 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 < 0.0008	SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	< 0.0008	0.0000	< 0.009	0.002	9800.0	0.0002
Highway 71 bridge, Ind. Stateline Rd. bridge, Ind. Stateline Rd. bridge, IllInd. LGP 04/04/02 10:25 5.15 na na na na na CR 3000E bridge, IllInd. 17.7 COF 04/04/02 10:50 5.41 0.0011 0.0015 <0.009 0.003 CR 2800E bridge, Ill. 21.4 COF 04/04/02 11:40 6.63 <0.0008 0.0005 <0.009 0.003 CR 2440E bridge, Ill. 30.1 COF 04/04/02 12:50 7.08 0.0017 0.0027 <0.009 0.000 Milford, Ill. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:40 9.83 <0.0008 0.0001 <0.009 0.003 Mud Cr. #2, Ill. 28.5 COF 04/04/02 12:10 0.61 <0.0008 0.0015 <0.009 0.000	SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.0021	0.0015	< 0.009	0.002	0.015	0.001
Stateline Rd. bridge, IIIInd. 14.0 COF 04/04/02 10:25 5.15 na na na na CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 0.0011 0.0015 < 0.009	SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	< 0.0008	0.0006	< 0.009	0.002	0.015	0.001
CR 3000E bridge, III. 17.7 COF 04/04/02 10:50 5.41 0.0011 0.0015 < 0.009 0.003 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 < 0.0008 0.0005 < 0.009 0.000 CR 2440E bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.0017 0.0027 < 0.009 0.000 Milford, III. 30.1 COF 04/04/02 13:40 9.83 < 0.0008 0.0001 < 0.009 0.000 Mud Cr. #1, Ind. 11.7 COF 04/04/02 13:40 9.83 < 0.0008 0.0010 < 0.009 0.003 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.0018 0.0012 < 0.009 0.000 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 < 0.0008 0.0009 0.0009 0.0009	SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na
CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 < 0.0008 0.0005 < 0.009 0.000 CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.0017 0.0027 < 0.009 0.001 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 < 0.0008 0.0001 < 0.009 0.001 Milford, III. 34.4 COF 04/04/02 13:40 9.83 < 0.0008 0.0004 < 0.009 0.003 Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 0.0018 0.0018 0.009 0.003 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.0018 0.0012 < 0.009 0.000 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 < 0.0008 0.0009 0.0009 0.0009	SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	0.0011	0.0015	< 0.009	0.003	0.015	0.001
CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 0.0017 0.0027 < 0.009 0.001 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 < 0.0008 0.0001 < 0.009 0.000 Milford, III. 34.4 COF 04/04/02 13:40 9.83 < 0.0008 0.0004 < 0.009 0.000 Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 < 0.0008 0.0010 < 0.009 0.003 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.0018 0.0012 < 0.009 0.000 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 < 0.0008 0.0009 0.0009 0.0009	SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	< 0.0008	0.0005	< 0.009	0.000	0.011	0.001
CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 < 0.0008 0.0001 < 0.009 0.000 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11.5 1.29 0.0018 0.0018 < 0.009 0.000 Mud Cr. #2, III. 28.5 COF 04/04/02 11:15 12.9 0.0018 0.0012 < 0.009 0.000 Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 < 0.0008 0.0006 < 0.009 0.0002	SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.0017	0.0027	< 0.009	0.001	0.015	0.001
Milford, III. 34.4 COF 04/04/02 13:40 9.83 < 0.0008 0.0004 < 0.009 0.003 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 < 0.0008	SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	< 0.0008	0.0001	< 0.009	0.000	0.016	0.001
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 < 0.0008	SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	< 0.0008	0.0004	< 0.009	0.003	0.015	0.000
Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 < 0.0008 0.0010 < 0.009 0.003 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 0.0018 0.0012 < 0.009		SUGAR CREEK TRIBUTA	RIES										
Mud Cr. #2, III. 21.2 COF $04/04/02$ 11:15 1.29 0.0018 0.0012 < 0.009 0.000 Unnamed trib., III. 28.5 COF $04/04/02$ 12:10 0.61 < 0.0008 0.0006 < 0.009 0.002	SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	< 0.0008	0.0010	< 0.009	0.003	0.012	0.001
Unnamed trib., III. 28.5 COF 04/04/02 12:10 0.61 <0.0008 0.0006 <0.009 0.002	SCT2		21.2	COF	04/04/02	11:15	1.29	0.0018	0.0012	< 0.009	0.000	0.015	0.001
	SCT3		28.5	COF	04/04/02	12:10	0.61	< 0.0008	0.0006	< 0.009	0.002	0.015	0.001

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

	DISI.	Location	Date	Time	\sim	ပိ		Ç		C		C	_	Dy	λ
	km				cms	l/gμ	1	µg/L	ر ع	l/gμ •	,	hg/L	L G	µg/L	
IROQUOIS RIVER	~					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.18	0.04	< 0.3	0.1	< 0.01	0.01	0.94	0.04	0.0077	0.0002
Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.13	0.02	0.5	0.1	< 0.01	0.00	0.94	0.04	0.0065	0.0003
Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.17	0.05	< 0.3	0.2	< 0.01	0.01	0.93	0.01	0.0077	0.0010
	5.9	COF	04/03/02	13:20	44.7	0.16	0.04	< 0.3	0.1	< 0.01	0.00	0.88		0.0071	0.0010
Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.14	0.04	< 0.3	0.1	< 0.01	0.01	0.85		0.0064	0.0006
CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.13	0.04	< 0.3	0.1	< 0.01	0.00	0.83		0.0056	0.0009
CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.14	0.05	< 0.3	0.1	< 0.01	0.00	0.89	0.03	0.0054	0.0004
CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.13	0.03	< 0.3	0.1	< 0.01	0.00	98.0	0.02	0.0061	0.0008
CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.15	0.04	< 0.3	0.2	< 0.01	0.00	0.82	0.00	0.0063	0.0005
CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.14	0.04	< 0.3	0.2	< 0.01	0.00	0.85	0.03	0.0055	0.0007
CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.12	0.05	< 0.3	0.1	< 0.01	0.01	0.87	0.04	0.0059	0.0008
Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.12	0.05	< 0.3	0.3	< 0.01	0.00	0.85	0.02	0.0058	0.0001
Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.14	0.06	< 0.3	0.0	< 0.01	0.00	0.85	0.02	0.0057	0.0004
SUGAR CREEK															
CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.13	0.04	< 0.3	0.1	< 0.01	0.01	0.39	0.01	0.0028	0.0002
CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.13	0.05	< 0.3	0.0	< 0.01	0.00	0.40	0.04	0.0027	0.0004
Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	0.10	0.02	< 0.3	0.2	< 0.01	0.01	0.40	0.01	0.0041	0.0001
Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na	na		na	na
CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	0.088	0.036	< 0.3	0.1	< 0.01	0.00	0.36		0.0032	0.0006
CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.072	0.051	< 0.3	0.2	< 0.01	0.00	0.35	0.01	0.0042	0.0007
CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.088	0.033	< 0.3	0.1	< 0.01	0.00	0.36		0.0042	0.0013
CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.099	0.025	< 0.3	0.1	< 0.01	0.00	0.37		0.0036	0.0005
	34.4	COF	04/04/02	13:40	9.83	0.10	0.05	< 0.3	0.1	< 0.01	0.00	0.37		0.0043	0.0002
SUGAR CREEK TRIBUTARIES	ARIES														
	11.7	COF	04/04/02	09:50		0.11	0.04	< 0.3	0.1	0.02	0.00	0.37		0.0032	0.0008
	21.2	COF	04/04/02	11:15	1.29	0.065	0.034	< 0.3	0.1	< 0.01	0.00	0.30	0.02	0.0033	0.0006
	28.5	COF	04/04/02	12.10		0.087	0.037	/ 03	1	/ 0.01	000	77		77000	0000

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Highway 55 Highway 16 Brook, Ind. Meridian Rd CR 100W br Highway 41 Newton Co. Redow br Highway 71 Stateline Rd CR 3000E br CR 2800E br	gage, Ind. gage, Ind. gage, Ind. bridge, Ind. bridge, Ind. idge, Ind. idge, Ind. idge, Ind.	km 0.0 0.0 2.0 5.9 9.4				cmc	hg/L	Ţ	1/σπ	L	Ι/υ		/σΠ	_	1/54
Highway 55 Highway 55 Highway 16 Brook, Ind. Meridian Rd CR 100W br Highway 41 Newton Co.	QUOIS RIVER , Ind. ge, Ind. lge, Ind. , Ind. , Ind. , Ind.					CIIIS			ú		1,024		ng/r	1	ng/r
Highway 55 Highway 16 Brook, Ind. Meridian Rd CR 100W br Highway 41 Newton Co.	QUOIS RIVER , Ind. ge, Ind. lge, Ind. , Ind. , Ind. , Ind. , Ind.						Avg	SD	Avg	SD	Avg S	SD	Avg	SD	Avg SD
Highway 55 g Highway 16 b Brook, Ind. Brook, Ind. Meridian Rd. I CR 100W bric CR 300W bric CR 400W bric CR 400W bric CR 400W bric CR 400W bric CR 3000E bric CR 3000E bric CR 2800E bric	s, Ind. ge, Ind. ge, Ind. ge, Ind. hid. hid. hid.														
Highway 55 g Highway 16 b Brook, Ind. Meridian Rd. 1 CR 100W bric CR 2800W bric CR 400W bric CR 400W bric CR 400W bric CR 500W bric	ge, Ind. ge, Ind. dge, Ind. , Ind. , Ind. , Ind.		COF	04/03/02	11:05	36.8	0.0072	0.0011	0.0037	0.0029	17	1	0.011	0.001	1.4 0.0
Highway 16 b Brook, Ind. Meridian Rd. 1 CR 100W bric CR 200W bric CR 400W bric CR 400W bric CR 400W bric CR 2000E bric CR 2800E bric CR 2800E bric	ge, Ind. lge, Ind. , Ind. , Ind. , Ind.	2.0 5.9 9.4	Backwater	04/03/02	12:20	36.8	0.0053	0.0010	0.0002	0.0017	15	1 0	0.0000	0.0014	1.5 0.1
Brook, Ind. Meridian Rd. I CR 100W bric CR 200W bric CR 400W bric CR 400W bric CR 400W bric CR 2000E bric CR 2800E bric CR 2800E bric	lge, Ind. , Ind. , Ind. , Ind.	5.9 4.6	COF	04/03/02	09:50	43.9	0.0064	0.0004	0.0023	0.0029	14	0	0.010	0.002	1.2 0.2
Meridian Rd. 1 CR 100W bric CR 400W bric	lge, Ind. , Ind. , Ind. , Ind.	9.4	COF	04/03/02	13:20	4.7	0.0063	0.0011	0.0017	0.0025			0.0094	0.0011	1.4 0.0
CR 100W bric CR 100W bric CR 100W bric CR 100W bric CR 100W bric CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric CR 600W bric CR 500W bric CR 500W bric CR 500W bric CR 2800E bric CR 2800E bric CR 2800E bric	, Ind. , Ind. , Ind.		COF	04/03/02	13:55	54.4	0.0068	0.0004	0.0012	0.0027	9.2 0	0.3 0	0.0095	0.0011	2.2 0.1
CR 100W bric CR 100W bric CR 100W bric CR 100W bric CR 100W bric CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric CR 3000E bric CR 3000E bric CR 2800E bric	, Ind. , Ind. Ind.	12.0	COF	04/03/02	14:25	47.0	0.0072	0.0002	< 0.0001	0.0004	13	0 0	0.0086	0.0005	1.0 0.3
CR 100W bric CR 100W bric CR 100W bric CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric CR 600W bric Highway 71 b Stateline Rd. E CR 3000E bric CR 2800E bric	, Ind. , Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.0052	0.0003	0.0018	0.0019	11	0 0		0.0004	1.7 0.1
CR 100W bric CR 100W bric CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric CR 600W bric CR 600W bric CR 3000E bric CR 3000E bric CR 2800E bric	, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.0056	0.0010	0.0006	0.0019	11	0 0	0.0080	0.0006	1.1 0.2
CR 100W bric CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric Highway 71 b Stateline Rd. t CR 3000E bric CR 2800E bric		12.0	34m LEW	04/03/02	15:30	47.0	0.0054	0.0003	0.0024	0.0036	12	_	0.010	0.000	1.4 0.1
CR 100W bric Highway 41 b Newton Co. F CR 400W bric CR 600W bric Highway 71 b Stateline Rd. b CR 3000E bric CR 2800E bric	, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.0062	0.0005	0.0008	0.0019	12	0 0	0.0085	0.0013	1.2 0.1
Highway 41 b Newton Co. F Newton Co. F CR 400W bric CR 600W bric Highway 71 b Stateline Rd. b CR 3000E bric CR 2800E bric	, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.0063	0.0003	< 0.0001	0.0014	12	0 0	9800.0	0.0005	1.3 0.1
CR 400W brid CR 600W brid CR 600W brid Highway 71 b Stateline Rd. E CR 3000E brid CR 2800E brid CR 2800E brid	ge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.0063	0.0012	< 0.0001	0.0015	14	1 0	0.0085	0.0013	1.2 0.0
CR 400W bric CR 600W bric Highway 71 b Stateline Rd. t CR 3000E bric CR 2800E bric	grounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.0061	0.0004	0.0024	0.0032	12	0 0	0.0093	0.0008	1.2 0.2
	SUGAR CREEK														
	, Ind.	0.0	COF	04/04/02	08:30	1.25	0.0021	900000	0.0012	0.0026	3.3 0	0 9'().0047	0.0012	0.0 9.0
	, Ind.	4.5	COF	04/04/02	08:55	2.24	0.0023	0.0002	0.0012	0.0031	2.9 0	0.4 0	0.0053	0.0013	0.5 0.1
	ge, Ind.	8.6	COF	04/04/02	09:15	2.76	0.0026	0.0003	< 0.0001	0.0021	3.0	0.8 0	0.0051	0.0007	0.7 0.1
	ge, IIIInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na	na	na	0.5 0.1
	, 111.	17.7	COF	04/04/02	10:50	5.41	0.0021	0.0004	< 0.0001	0.0015			0.0053	0.0003	0.0 9.0
	; Ш.	21.4	COF	04/04/02	11:40		0.0021	0.0007	< 0.0001	0.0023			0.0055	0.0013	0.5 0.1
SC07 CR 900N bridge, III.	Ш.	26.9	COF	04/04/02	12:50	7.08	0.0031	0.0003	0.0002	0.0015	1.7 C	0.1 0	0.0047	0.0003	2.3 0.0
SC08 CR 2440E bridge, III.	, III.	30.1	COF	04/04/02	13:00	8.64	0.0020	0.0007	0.0009	0.0027		0.6 0	0900.0	0.0013	0.5 0.1
SC09 Milford, Ill.		34.4	COF	04/04/02	13:40	9.83	0.0032	0.0005	0.0017	0.0014	1.7 C	.5 0	0.0064	0.0003	0.8 0.1
SUGAR CR	SUGAR CREEK TRIBUTARIES	RIES													
SCT1 Mud Cr. #1, Ind.		11.7	COF	04/04/02	06:50	2.13	0.0023	0.0003	< 0.0001	0.0020		0.0		0.0005	0.5 0.1
SCT2 Mud Cr. #2, III.		21.2	COF	04/04/02	11:15	1.29	0.0027	0.0002	0.0002	0.0013			0.0054	0.0007	
SCT3 Unnamed trib., Ill.	1.	28.5	COF	04/04/02	12:10	0.61	0.0027	0.0007	< 0.0001	0.0011	1.3 0	0.8 0	0.0062	0.0004	0.5 0.1

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	O	Ho		La	a	Li		Lu	_	Mn	
Name		km				cms	µg/L	Г	J/gµ	Ţ	$\mu g/L$	Г	J/gµ	Ţ	µg/L	ت
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	~														
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8 (0.0019	0.0002	0.028	0.001	2.2	0.2	0.0018	0.0000	13	0
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.0016	0.0003	0.025	0.000	2.1	0.1	0.0017	0.0001	6.7	0.7
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9 (0.0019	0.0001	0.027	0.001	2.1	0.2	0.0017	0.0001	12	0
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7 (0.0017	0.0002	0.025	0.000	2.0		0.0018	0.0001	12	0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55		0.0014	0.0001	0.022	0.001	2.2		0.0019	0.0001	10	0
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0 (0.0017	0.0002	0.021	0.001	2.1		0.0018	0.0000	9.1	0.2
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05		0.0016	0.0001	0.021	0.001	2.1	_	0.0015	0.0002	4.5	0.0
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	_	0.0016	0.0000	0.022	0.000	2.1	0.1	0.0016	0.0001	7.1	0.1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30		0.0017	0.0001	0.022	0.001	2.4	_	0.0017	0.0000	0.6	0.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0 (0.0015	0.0000	0.022	0.000	2.1	0.1	0.0014	0.0000	8.9	0.0
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0 (0.0015	0.0001	0.023	0.000	2.1	0.0	0.0016	0.0002	8.3	0.0
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0 (0.0017	0.0003	0.021	0.000	2.3	0.0	0.0016	0.0001	7.9	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5 (0.0014	0.0001	0.022	0.001	2.3	0.2	0.0015	0.0000	6.9	0.0
	SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25 (9000'0	0.0000	0.0083	0.0002	2.7	0.1	0.0003	0.0001	23	0
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24 (0.0000	0.0002	0.014	0.000	5.6	0.1	0.0004	0.0000	19	0
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76 (0.0008	0.0001	0.014	0.001	2.4	0.1	0.0003	0.0002	16	0
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41 (0.0010	0.0001	0.015	0.001	2.4		0.0004	0.0001	13	0
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40		0.0009	0.0002	0.013	0.001	2.5		0.0004	0.0001	10	0
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.0009	0.0001	0.015	0.000	2.4		9000.0	0.0001	7.3	0.1
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64 (0.0008	0.0001	0.015	0.001	5.6		0.0005	0.0001	8.0	0.0
SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83 (0.0010	0.0001	0.015	0.001	2.6	0.1	0.0005	0.0002	9.7	0.1
	SUGAR CREEK TRIBUTARIES	ARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13 (0.0001	0.013	0.001	2.1	0.0	0.0004	0.0001	17	0
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29 (0.0011	0.0000	0.018	0.000	2.5	0.1	0.0005	0.0001	5.2	0.0
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61 (0.0007	0.0001	0.016	0.001	3.0	0.1	0.0004	0.0001	15	0
							·									

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Name	Site	Site Location ¹	Dist. ¹	Location	Date	Time	\circ	Мо		PN	Ϋ́		Pb		Pr	ı
Highway 55 gage, Ind. Highway 55 gage, Ind. O COF 0403302 11:05 36.8 2.4 01 0.036 0.001 1.0 0.4 0.038 0.0007 1.0 0.004 Highway 55 gage, Ind. O Backware 1 0403302 11:05 36.8 2.4 01 0.036 0.001 1.0 0.3 0.019 0.007 0.0064 Highway 16 bridge, Ind. S COF 0403302 13:20 44.7 2.5 0.1 0.034 0.001 1.0 0.3 0.016 0.009 0.0054 Merdian and Ab bridge, Ind. CR 100W bridge, Ind. 12.0 6m LEW 0403302 15:05 47.0 2.4 0.0 0.020 0.002 0.00 0.0054 0.000 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.020 0.002 0.00 0.0054 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.020 0.002 0.00 0.0054 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.025 0.000 0.0054 0.005 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.025 0.000 0.0054 0.005 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.029 0.000 0.0054 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.029 0.000 0.0054 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.029 0.000 0.00 0.0054 0.0054 0.0054 CR 100W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.029 0.000 0.00 0.0054 0.0054 0.0054 CR 400W bridge, Ind. 12.0 7m LEW 0403302 15:05 47.0 2.4 0.0 0.029 0.000 0.009 0.000 0.0054 CR 400W bridge, Ind. 12.1 7 COF 0404302 15:05 51.2 5.0 1.0 0.024 0.001 0.008 0.000 0.00054 CR 800W bridge, Ind. 12.1 1	Name	_	km				cms		д Ауд		µg/ Avg	SD	µg/ Avg		μg Αν <u>ε</u>	/L SD
Highway 55 gage, Ind. 100 GOF Highway 55 gage, Ind. 100 Backwater Highway 16 bridge, Ind. 100 Backwater Highway 16 bridge, Ind. 100 GOF Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 16 bridge, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 16 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 17 bridge, Ind. Highway 18 b		IROQUOIS RIVER	~						0	1	0	!	o	1.	o	
Highway 16 gage, Ind. 10. OSP (40/30)2 12:20 36.8 2.4 0.0 0.030 0.001 < 0.8 0.3 0.019 0.007 0.0064 Highway 16 bridge, Ind. 20. COF (40/30)2 13:20 44.7 2.5 0.1 0.034 0.001 1.0 0.3 0.016 0.000 0.0068 Meridian Rd. bridge, Ind. 21. COF (40/30)2 13:20 44.7 2.5 0.1 0.034 0.001 1.0 0.3 0.016 0.000 0.0068 Meridian Rd. bridge, Ind. 22. COF (40/30)2 13:20 44.0 0.002 0.002 0.001 1.0 0.3 0.016 0.000 0.0064 0.000 bridge, Ind. 22. COF (40/30)2 13:20 44.0 0.002 0.002 0.000 0.003 0.000 0.004 0.0064 0.000 bridge, Ind. 22. COF (40/30)2 13:20 44.0 0.002 0.002 0.000 0.000 0.000 0.0004 0.0004 bridge, Ind. 22. COF (40/30)2 13:20 44.0 0.002 0.000 0.000 0.000 0.000 0.0004 0.0004 bridge, Ind. 22. CR 100W bridge, Ind. 22. OMILEW (40/30)2 15:20 47.0 2.5 0.0 0.027 0.000 0.00 0.000 0.0004 0.0004 0.0004 bridge, Ind. 22. OMILEW (40/30)2 15:20 47.0 2.5 0.0 0.027 0.000 0.000 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 bridge, Ind. 22. OMILEW (40/30)2 15:00 47.0 2.5 0.0 0.027 0.000 0.0004 0.0	IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8 2	2.4 0.1	0.036	0.003	1.1	0.4	0.038	0.003	0.0077	0.0002
Highway 16 bridge, Ind. So COFF 04/03/02 13:55 54.4 2.4 0.0 0.031 0.001 c.0.8 0.2 0.016 0.006 0.0054 Brook, Ind. So COFF 04/03/02 13:55 54.4 2.4 0.0 0.027 0.002 1.0 0.1 0.01 0.000 0.0054 Meridian Rd bridge, Ind. So COFF 04/03/02 13:55 54.4 2.4 0.0 0.027 0.002 1.0 0.1 0.01 0.000 0.0054 CR 100W bridge, Ind. So COFF 04/03/02 15:05 47.0 2.4 0.0 0.028 0.002 0.9 0.0 0.025 0.000 0.0054 CR 100W bridge, Ind. So COFF 04/03/02 15:05 47.0 2.4 0.0 0.027 0.002 0.9 0.0 0.025 0.000 0.0054 CR 100W bridge, Ind. So COFF 04/03/02 15:05 47.0 2.4 0.0 0.027 0.002 0.9 0.0 0.025 0.000 0.0054 CR 100W bridge, Ind. So COFF 04/03/02 15:04 47.0 2.4 0.0 0.027 0.002 0.9 0.4 0.017 0.002 0.0054 CR 100W bridge, Ind. SO COFF 04/03/02 15:04 47.0 2.4 0.0 0.027 0.002 0.9 0.4 0.017 0.000 0.0054 Highway 41 bridge, Ind. SO COFF 04/03/02 15:04 47.0 2.4 0.0 0.029 0.002 0.9 0.4 0.017 0.000 0.0054 Highway 41 bridge, Ind. SO COFF 04/03/02 15:04 12.2 0.1 0.024 0.001 c.0.8 0.4 0.017 0.002 0.0054 Highway 41 bridge, Ind. SO COFF 04/03/02 16:05 15.2 0.1 0.025 0.001 c.0.8 0.4 0.017 0.000 0.0054 CR 400W bridge, Ind. SO COFF 04/03/02 16:05 15.2 0.1 0.012 0.001 c.0.8 0.4 0.010 0.0054 Highway 71 bridge, Ind. SO COFF 04/04/02 08:35 12.4 0.0 0.016 0.001 c.0.8 0.4 0.010 0.0039 Highway 11 bridge, Ind. SO COFF 04/04/02 08:35 12.4 0.0 0.016 0.001 c.0.8 0.3 0.4 0.010 0.0039 Highway 11 bridge, Ind. SO COFF 04/04/02 08:35 12.0 0.016 0.001 c.0.8 0.3 0.0 0.004 0.001 0.0039 CR 200B bridge, III. SO COFF 04/04/02 18:26 0.2 0.1 0.017 0.001 c.0.8 0.3 0.0 0.004 0.001 0.0038 CR 200B bridge, III. SO COFF 04/04/02 18:26 0.4 0.0 0.017 0.001 c.0.8 0.3 c.0.004 0.001 0.0038 CR 200B bridge, III. SO COFF 04/04/02 18:26 0.4 0.0 0.017 0.001 c.0.8 0.3 c.0.004 0.001 0.0038 CR 240B bridge, III. SO COFF 04/04/02 18:26 0.4 0.0 0.017 0.001 c.0.8 0.3 c.0.004 0.001 0.0038 CR 240B bridge, III. SO COFF 04/04/02 18:26 0.4 0.0 0.017 0.001 c.0.8 0.3 c.0.004 0.001 0.0038 CR 240B bridge, III. SO COFF 04/04/02 18:26 0.4 0.0 0.017 0.001 c.0.8 0.0 0.001 0.003 0.0034 Milf	IR01	Highway 55 gage, Ind.		Backwater	04/03/02	12:20	36.8	2.4 0.0	0.030	0.001	< 0.8	0.3	0.019	0.007	0.0064	0.0002
Brook, Ind. 5.9 COF 04/03/02 13:20 4-7.7 2.5 0.01 0.034 0.001 1.0 0.3 0.016 0.002 0.003 Meridian Rd, bridge, Ind. 12.0 COF 04/03/02 13:25 54.4 0.0027 0.002 1.0 0.01 0.005 0.000 0.005	IR02	Highway 16 bridge, Ind.		COF	04/03/02	09:50	43.9	0.0 9.2	0.031	0.001	< 0.8	0.2	0.016	0.004	0.0069	0.0003
CR 100W bridge, Ind. 9.4 COF 04/03/02 13:55 54.4 24 0.0 0.027 0.002 1.0 0.1 0.01 0.005 CR 100W bridge, Ind. 12.0 COFF 04/03/02 13:55 54.4 24 0.0 0.027 0.002 0.0	IR03	Brook, Ind.		COF	04/03/02	13:20		_	0.034	0.001	1.0	0.3	0.016	0.002	0.0068	0.0003
CR 100W bridge, Ind. 12.0 Gn LEW 04/03/02 14:25 47.0 24 0.0 0.026 0.000 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	IR04	Meridian Rd. bridge, Ind.		COF	04/03/02	13:55			0.027	0.002	1.0	0.1	0.011	0.000	0.0054	0.0002
CR 100W bridge, Ind. CR 10W bridge, Ind. CR 1	IR05	CR 100W bridge, Ind.		COF	04/03/02	14:25			0.028	0.002	6.0	0.0	0.025	0.000	0.0054	0.0003
CR 100W bridge, Ind. 12.0 17m LEW 04/03/02 15:20 47.0 2.5 0.0 0.027 0.002 < 0.8 0.6 0.026 0.002 0.0054 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 2.5 0.0 0.027 0.002 < 0.8 0.4 0.013 0.001 0.0061 CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 2.4 0.0 0.029 0.002 0.9 0.4 0.017 0.002 0.0054 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.4 0.0 0.028 0.00 0.9 0.5 0.017 0.002 0.0054 Highway 41 bridge, Ind. 21.1 COF 04/03/02 16:00 53.5 2.4 0.0 0.025 0.001 < 0.8 0.4 0.017 0.002 0.0057 CR 400W bridge, Ind. 21.1 COF 04/03/02 16:00 53.5 2.4 0.1 0.024 0.001 < 0.8 0.4 0.017 0.002 0.0057 CR 400W bridge, Ind. 4.5 COF 04/04/02 08:35 2.4 0.1 0.016 0.001 < 0.8 0.4 0.017 0.002 0.0057 CR 200R bridge, Ind. 4.5 COF 04/04/02 08:35 2.4 0.1 0.016 0.001 < 0.8 0.6 0.004 0.001 0.0037 CR 200R bridge, Ind. 4.5 COF 04/04/02 08:35 2.4 0.1 0.016 0.001 < 0.8 0.5 0.004 0.001 0.0037 CR 200R bridge, Ind. 4.5 COF 04/04/02 10:50 5.15 na	IR05	CR 100W bridge, Ind.		6m LEW	04/03/02	15:05			0.026	0.000	< 0.8	0.2	0.021	0.003	0.0056	0.0003
CR 100W bridge, Ind. 12.0 34m LEW 04/03/02 15:30 47.0 2.5 0.0 0.027 0.002 <0.8 0.4 0.013 0.001 0.0058 CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 2.4 0.0 0.029 0.002 0.9 0.5 0.001 0.0052 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.4 0.0 0.029 0.000 0.9 0.5 0.01 0.0052 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.4 0.0 0.028 0.000 0.9 0.5 0.01 0.0052 Newton C. Faiigrounds, Ind. 12.1 COF 04/03/02 16:00 5.5 0.1 0.025 0.001 <0.8 0.2 0.017 0.002 0.0053 CR 400W bridge, Ind. 12.0 COF 04/04/02 16:30 5.2 0.1 0.025 0.001 <0.8 0.4 0.012 0.000 0.0052 CR 400W bridge, Ind. 12.0 COF 04/04/02 08:30 1.25 2.2 0.1 0.015 0.001 <0.8 0.4 0.012 0.0001 CR 300B bridge, Ind. 12.1 COF 04/04/02 08:30 1.25 2.2 0.1 0.016 0.001 <0.8 0.4 0.010 0.003 Highway 71 bridge, Ind. 12.1 COF 04/04/02 08:30 1.25 2.2 0.1 0.016 0.001 <0.8 0.4 0.001 0.003 CR 300B bridge, Ind. 12.1 COF 04/04/02 08:30 1.25 2.2 0.1 0.016 0.001 <0.8 0.4 0.001 0.003 CR 300B bridge, Ind. 12.1 COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.		17m LEW	04/03/02	15:20	47.0 2	2.5 0.0	0.027	0.000	< 0.8	9.0	0.026	0.002	0.0054	0.0003
CR 100W bridge, Ind. 12.0 50m LEW 04/03/02 14:50 47.0 2.4 0.0 0.029 0.002 0.9 0.4 0.017 0.002 0.005 CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 15:00 53.5 2.5 0.1 0.024 0.001 <0.8 0.2 0.017 0.005 0	IR05	CR 100W bridge, Ind.		34m LEW	04/03/02	15:30			0.027	0.002	< 0.8	0.4	0.013	0.001	0.0061	0.0001
CR 100W bridge, Ind. 12.0 70m LEW 04/03/02 15:00 47.0 2.4 0.0 0.028 0.000 0.9 0.5 0.01 0.001 0.0002 Highway 41 bridge, Ind. SUGAR CREEK CR 400W bridge, Ind. O4/04/02 16:00 51.0 2.5 0.1 0.024 0.001 < 0.08 0.2 0.017 0.002 0.0057 CR 300W bridge, Ind. OA COF 04/04/02 08:35 2.5 0.1 0.025 0.001 < 0.08 0.3 0.0 0.000 0.0002 CR 300W bridge, Ind. OA COF 04/04/02 08:35 2.2 0.1 0.016 0.001 < 0.08 0.3 0.0 0.000 0.0001 CR 300W bridge, Ind. OA COF 04/04/02 08:35 2.2 0.1 0.016 0.001 < 0.08 0.3 0.000 0.0001 CR 300W bridge, Ind. OA COF 04/04/02 08:35 2.2 0.1 0.016 0.001 < 0.08 0.3 0.000 0.0001 CR 300W bridge, III. Ind. OA COF 04/04/02 10:25 5.15 na	IR05	CR 100W bridge, Ind.	_	50m LEW	04/03/02	14:50	47.0 2	2.4 0.0	0.029	0.002	6.0	0.4	0.017	0.002	0.0058	0.0001
Highway 41 bridge, Ind. SUGAR CREEX Newton Co. Fairgrounds, Ind. SUGAR CREEX SUGAR CREEX CR 400M bridge, Ind. SUGAR CREEX TRIBUTARIES Miltort, III. SUGAR CREEX TRIBUTARIES Midd Cr. #1, Ind. SUGAR CREEX TRIBUTARIES CDF 04/04/02 12:10 6.01 6.001 6.001 6.08 0.5 6.004 6.002 6.003	IR05	CR 100W bridge, Ind.		70m LEW	04/03/02	15:00	47.0 2	2.4 0.0	0.028	0.000	6.0	0.5	0.019	0.001	0.0063	0.0004
SUGAR CREEK COF 04/03/02 16:30 53.5 2.5 0.1 0.025 0.001 < 0.8 0.4 0.012 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.004/02 0.8 0.2 0.01 0.001 0.00 0.004 0.004/02 0.8 0.2 0.01 0.00 0.004	IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0 2	2.5 0.1	0.024	0.001	< 0.8	0.2	0.017	0.002	0.0057	0.0000
SUGAR CREEK CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 2.2 0.1 0.016 0.09 0.00 <td>IR07</td> <td>Newton Co. Fairgrounds, Ind.</td> <td>21.1</td> <td>COF</td> <td>04/03/02</td> <td>16:30</td> <td>53.5</td> <td>2.5 0.1</td> <td>0.025</td> <td>0.001</td> <td>< 0.8</td> <td>0.4</td> <td>0.012</td> <td>0.000</td> <td>0.0062</td> <td>0.0001</td>	IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	2.5 0.1	0.025	0.001	< 0.8	0.4	0.012	0.000	0.0062	0.0001
CR 400W bridge, Ind. 0.0 COF 04/04/02 08:30 1.25 2.2 0.1 0.012 0.001 < 0.8 0.0 < 0.004 0.002 0.004 0.001 < 0.8 0.1 < 0.004 0.001 0.001 < 0.8 0.1 < 0.004 0.001 0.001 < 0.8 0.1 < 0.004 0.001 0.001 < 0.001 < 0.001 < 0.001 < 0.001 0.001		SUGAR CREEK														
CR 600W bridge, Ind. 4.5 COF 04/04/02 08:55 2.24 2.2 0.1 0.016 0.001 < 0.8 0.1 < 0.004 0.001 < 0.004 0.001 0.003 Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 2.2 0.1 0.016 0.001 < 0.8	SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	2.2 0.1	0.012	0.001	< 0.8	0.0	< 0.004	0.002	0.0019	0.0001
Highway 71 bridge, Ind. 9.8 COF 04/04/02 09:15 2.76 2.2 0.1 0.016 0.001 < 0.8 0.5 < 0.004 0.0 0.001 0.0033 Stateline Rd. bridge, IllInd. 14.0 COF 04/04/02 10:25 5.15 na	SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55		_	0.016	0.001	< 0.8		< 0.004	0.001	0.0030	0.0001
Stateline Rd. bridge, IIIInd.	SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15		_	0.016	0.001	< 0.8		< 0.004	0.001	0.0033	0.0003
CR 3000E bridge, III. 21.4 COF 04/04/02 10:50 5.41 2.2 0.0 0.017 0.001 < 0.8 0.5 < 0.004 0.002 0.0033 CR 2800E bridge, III. 21.4 COF 04/04/02 11:40 6.63 2.1 0.0 0.012 0.000 < 0.8 0.2 0.005 0.002 CR 2440E bridge, III. 30.1 COF 04/04/02 12:50 7.08 2.1 0.0 0.012 0.001 < 0.8 0.5 < 0.004 0.002 0.0035 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 2.1 0.0 0.019 0.002 < 0.8 0.3 < 0.004 0.003 0.0035 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 1.3 0.0 0.019 0.001 < 0.8 0.5 < 0.004 0.003 0.0048 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 1.3 0.0 0.018 0.018 0.01 < 0.8 0.5 < 0.004 0.003 0.0048 Onumamed trib, III. 28.5 COF 04/04/02 12:10 0.61 1.3 0.0 0.018 0.018 0.01 < 0.8 < 0.004 0.003 0.0038	SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25			na	na	na	na	na	na	na	na
CR 2800E bridge, III. 26.9 COF 04/04/02 11:40 6.63 2.1 0.0 0.012 0.000 < 0.8 0.2 0.005 0.002 0.0028 CR 2440E bridge, III. 26.9 COF 04/04/02 12:50 7.08 2.1 0.0 0.017 0.001 < 0.8 0.3 < 0.004 0.003 0.0035 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 1.3 0.0 0.018 0.001 < 0.8 0.5 < 0.004 0.00 0.018 0.001 < 0.8 0.5 < 0.004 0.003 0.0038 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 1.3 0.0 0.018 0.018 0.01 < 0.8 0.5 < 0.004 0.003 0.0038 Omnamed trib, III.	SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50			0.017	0.001	< 0.8		< 0.004	0.002	0.0033	0.0003
CR 900N bridge, III. 26.9 COF 04/04/02 12:50 7.08 2.1 0.0 0.017 0.001 < 0.8 0.5 < 0.004 0.000 0.0035 CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 2.1 0.0 0.019 0.002 < 0.8 0.3 < 0.004 0.003 0.0035 Milford, III. 34.4 COF 04/04/02 13:40 9.83 2.1 0.1 0.016 0.001 < 0.8 0.4 < 0.004 0.00 0.003 Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 1.3 0.0 0.018 0.001 < 0.8 0.5 < 0.004 0.00 0.003 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 1.3 0.0 0.018 0.001 < 0.8 0.5 < 0.004 0.003 0.0038	SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40			0.012	0.000	< 0.8	0.2	0.005	0.002	0.0028	0.0001
CR 2440E bridge, III. 30.1 COF 04/04/02 13:00 8.64 2.1 0.0 0.019 0.002 < 0.8 0.3 < 0.004 0.000 0.003 0.0035 Milford, III. SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 11:15 1.29 1.3 0.0 0.018 0.001 < 0.8 0.5 < 0.004 0.003 0.0038 Mud Cr. #2, III. 28.5 COF 04/04/02 12:10 0.61 1.3 0.0 0.018 0.001 < 0.8 0.5 < 0.004 0.003 0.0038 Onumamed trib, III.	SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	•	_	0.017	0.001	< 0.8	0.5	< 0.004	0.000	0.0035	0.0005
Milford, III. 34.4 COF 04/04/02 13:40 9.83 2.1 0.1 0.016 0.001 < 0.8 0.4 < 0.004 0.0038 SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 2.4 0.0 0.013 0.001 1.6 0.1 0.005 0.0028 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 1.3 0.0 0.019 0.001 < 0.8	SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	•	_	0.019	0.002	< 0.8	0.3	< 0.004	0.003	0.0035	0.0000
SUGAR CREEK TRIBUTARIES Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 2.4 0.0 0.013 0.001 1.6 0.1 0.005 0.0028 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 1.3 0.0 0.019 0.001 < 0.8	SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	2.1 0.1	0.016	0.001	< 0.8	0.4	< 0.004	0.002	0.0038	0.0003
Mud Cr. #1, Ind. 11.7 COF 04/04/02 09:50 2.13 2.4 0.0 0.013 0.001 1.6 0.1 0.005 0.0028 0.0024 Mud Cr. #2, III. 21.2 COF 04/04/02 11:15 1.29 1.3 0.0 0.019 0.001 < 0.8		SUGAR CREEK TRIBUT	ARIES													
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13		0.013	0.001	1.6	0.1	0.005	0.005	0.0028	0.0002
Unnamed trib., III. 28.5 COF $04/04/02$ 12:10 0.61 1.3 0.0 0.018 0.001 < 0.8 0.6 < 0.004 0.003 0.0038	SCT2		21.2	COF	04/04/02	11:15			0.019	0.001	< 0.8		< 0.004	0.003	0.0044	0.0000
	SCT3		28.5	COF	04/04/02	12:10			0.018	0.001	< 0.8	0.6	< 0.004	0.003	0.0038	0.0003

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist.	Location	Date	Time	O	Rb		Re		Sb	Se		Sm	
Name ¹		km				cms	g/I	•	µg/L	gų.	µg/L		L	µg/L	
						,	Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	~													
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05		_			0.11	0.00	8.0	0.1	0.0085	0.0011
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	.53 0.02	_ \		0.11	0.00	6.0	0.1	0.0071	0.0012
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9 (0.10	0.01	8.0	0.1	0.0075	0.0013
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7		0 0.013	0.001	0.095	0.001	6.0	0.0	0.0067	0.0003
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4 (0.094	0.002	8.0	0.1 0	9900.0	0.0007
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0 (0.47 0.01			0.094	0.003	6.0	0.1	0900.0	0.0007
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0 (0.092	0.001	6.0	0.1 0	0.0050	0.0012
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0 (0.097	0.002	6.0	0.0	0900.0	0.0008
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30		0.49 0.0			0.095	0.001	6.0	0.1 0	0.0062	0.0010
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0 (1 0.012		0.099	0.001	6.0	0.1 0	0.0063	0.0000
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0 (0.47 0.00	0 0.013		0.097	0.005	6.0	0.1	0.0054	0.0001
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.45 0.0	1 0.013		0.100	0.003	6.0	0.2 0	0900.0	0.0007
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5 (0.45 0.01	1 0.012	0.000	0.097	0.003	8.0	0.1 0	0.0058	0.0003
	SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25 (0.26 0.01	L.,		0.073	0.003	6.0	0.0	0.0016	0.0004
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24 (0.29 0.01	1 0.0075	900000	0.072	0.004	1.0	0.1	0.0034	0.0007
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76 (0.29 0.00		0.0002	0.074	0.002	1.0	0.1	0.0033	0.0008
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25		na na	na na	na	na	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50		_	0 0.010	0.000	0.076	0.004	6.0	0.1	0.0032	0.0010
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40		0.24 0.00	_		0.075	0.003	6.0	0.1	0.0036	0.0008
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08		_		0.074	0.004	6.0	0.1	0.0036	0.0007
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.23 0.01	1 0.0087	0.0002	0.069	0.002	0.8	0.1	0.0028	0.0002
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83 (0.23 0.00	0 0.0088	3 0.0003	0.075	0.002	8.0	0.1 0	0.0036	0.0006
	SUGAR CREEK TRIBUTARIES	ARIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13 (0.28 0.01	1 0.011	0.000	0.080	0.004	8.0	0.1 0	0.0040	0.0003
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29 (_		0.0006	0.051	0.002	8.0	0.1	0.0036	900000
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.18 0.01	1 0.0057	0.0008	0.044	0.003	9.0	0.1	0.0045	0.0010

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	\circ	Sr		Ta		Tb	0	Te	0	Th	
Name ¹		km				cms	µg/L		µg/L		hg/L	Ţ	J/gn	Ţ	hg/L	\T
							Avg SD	D	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	~														
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	160 () > (< 0.0004 (0.0002	0.0012	0.0000	0.012	0.005	0.0059	0.0028
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	170 (· (0.0004	0.0004	0.0011	0.0001	0.013	0.004	0.0043	9000.0
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	170 (· (< 0.0004	0.0004	0.0011	0.0000	0.012	0.004	0.0089	0.0051
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	7.44	170 (> (< 0.0004	0.0002	0.0000	0.0000	0.013	0.007	0.0074	0.0025
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	170 (· (0.0004	0.0000	0.0011	0.0000	0.014	900.0	0.0050	0.0000
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	170 (_	0.0005	0.0002	0.0010	0.0003	0.013	0.002	0.0063	0.0022
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	160 (> 0	0.0004	0.0000	0.0000	0.0000	0.012	0.001	0.0028	0.0004
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	160 (· (< 0.0004	0.0001	0.0010	0.0000	0.023	0.008	0.0032	0.0003
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	170 (· (< 0.0004	0.0003	0.0009	0.0000	0.019	900.0	0.0049	0.0011
_ IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	160 (· (< 0.0004	0.0003	0.0010	0.0001	0.013	0.002	0.0052	0.0002
% IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	160 (· ·	0.0004	0.0001	0.0010	0.0001	0.014	0.005	0.0057	0.0017
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	170 (· (0.0004	0.0004	0.0010	0.0002	0.013	0.005	0.0081	0.0039
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	160 () < (0.0004 (0.0003	0.0009	0.0001	0.018	0.003	0.0049	0.0004
	SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	120 () > (< 0.0004 (0.0001	0.0005	0.0001	0.014	0.005	0.0013	900000
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	120 (· (< 0.0004	0.0002	0.0005	0.0001	0.019	0.011	0.0012	0.0002
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	120 (· ·	0.0004	0.0003	0.0005	0.0001	0.016	0.002	0.0015	0.0008
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na na	В	na	na	na	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	120 (· 0	< 0.0004	0.0002	0.0006	0.0000	0.018	900.0	0.0019	0.0012
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63		· 0	< 0.0004	0.0001	0.0006	0.0001	0.021	0.007	0.0018	0.0019
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	120 (> 0	< 0.0004	0.0002	0.0007	0.0001	0.019	0.000	0.0006	0.0003
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	120 (> 0	0.0004	0.0002	0.0006	0.0000	0.020	0.003	0.0012	0.0000
SC09		34.4	COF	04/04/02	13:40	9.83	120 () < (0.0004 (0.0003	0.0006	0.0001	0.023	0.002	0.0013	0.0005
	SUGAR CREEK TRIBUTARIES	ARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	120 () > 0	< 0.0004	0.0001	900000	0.0001	0.017	0.001	0.0017	0.0008
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	110 (· (< 0.0004	0.0001	0.0006	0.0000	0.021	0.007	0.0015	0.0010
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	100 () < (< 0.0004 (0.0001	0.0008	0.0001	0.027	0.003	0.0010	0.0003

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	\circ	Ţ	T	Ţ	T	Tm	U		>	
Name ¹	_	km				cms	µg/L	hg/L	/L	hg/L	7/r	hg/L	Γ	µg/L	1
							Avg SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER	R													
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8			0.000	0.0010	0.0001	1.9	0.0	0.4	0.1
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8		0.006	0.001	0.0009	0.0002	1.9	0.1	0.3	0.1
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9		0.006	0.001	0.0011	0.0000	1.9	0.1	0.4	0.2
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20				0.003	0.0010	0.0003	1.9	0.1	0.4	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55		< 0.6 0.3		0.004	0.0010	0.0001	1.9	0.1	0.5	0.3
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0			0.003	0.0009	0.0001	1.9	0.1	0.5	0.3
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0			0.001	0.0010	0.0001	1.8	0.0	0.4	0.1
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	< 0.4 0.2		0.001	0.0011	0.0003	1.8	0.1	0.3	0.1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30					0.0010	0.0002	1.9	0.0	0.3	0.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0		0.006		0.0009	0.0001	1.8	0.0	0.3	0.1
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	< 0.4 0.1			0.0009	0.0001	1.8	0.0	0.4	0.1
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0		0.014	0.000	0.0011	0.0000	1.9	0.1	0.4	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	< 0.4 0.0	0.007	0.002	0.0010	0.0000	1.9	0.0	0.4	0.0
	SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25		V	0.001	0.0003	0.0002	1.9	0.1	0.4	0.1
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24		< 0.003	0.002	0.0003	0.0001	2.0	0.0	0.4	0.1
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	< 0.4 0.4		0.002	0.0003	0.0001	2.1	0.1	0.4	0.1
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na na	na	na	na	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41			0.002	0.0003	0.0001	2.1	0.1	0.3	0.1
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40		< 0.4 0.2		0.007	0.0004	0.0001	1.9	0.1	0.3	0.0
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08			0.001	0.0004	0.0001	1.9	0.0	0.3	0.1
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64		0.003	0.001	0.0004	0.0001	1.8	0.1	0.3	0.1
SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	< 0.4 0.2	0.005	0.002	0.0004	0.0001	1.8	0.1	0.3	0.1
	SUGAR CREEK TRIBUTARIES	FARIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	06:50	2.13	< 0.4 0.2	0.004	0.000	0.0003	0.0001	2.0	0.0	0.2	0.1
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	< 0.4 0.0	V	0.001	0.0005	0.0001	1.1	0.0	< 0.2	0.1
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	< 0.4 0.1	0.003	0.001	0.0004	0.0001	96.0	0.01	0.2	0.0

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	O	W		Y		Y	Yb	Zn		Zr	
Name	-	km				cms	1/gn	٦	J/gµ	T	J/gh	L	µg/L	L	J/gµ	د
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	IROQUOIS RIVER															
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.003	0.001	0.058	0.001	9800.0	0.0002	13	0	0.13	0.00
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.004	0.000	0.049	0.002	0.0087	0.0007	2.3	0.1	0.10	0.00
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.003	0.000	0.055	0.001	9600.0	0.0001	8.6	0.2	0.12	0.00
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.003	0.001	0.056	0.002	0.0080	0.0010	14	0	3.098	0.011
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.002	0.001	0.050	0.001	0.0082	0.0011	10	0	0.091	0.004
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.002	0.001	0.048	0.001	0.0085	0.0001	16	0	0.082	0.002
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.003	0.001	0.047	0.001	0.0077	0.0007	10	0	0.082	0.001
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.002	0.000	0.051	0.001	0.0079	0.0004	33	_	0.085	0.002
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.002	0.001	0.049	0.000	0.0081	0.0005	4.6	0.2	0.085	0.001
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.003	0.002	0.051	0.001	0.0079	0.0003	7.7	0.0	0.085	0.001
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.004	0.001	0.050	0.001	0.0089	0.0006	14	0	0.090	900.0
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.007	0.000	0.050	0.001	0.0082	0.0003	5.1	0.2	3.098	0.013
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.003	0.001	0.048	0.002	0.0076	0.0010	7.2	0.2	0.089	0.003
	SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	< 0.002	0.001	0.029	0.001	0.0020	0.0002	13	0	0.030	0.002
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	< 0.002	0.001	0.032	0.001	0.0020	0.0002	6.6	0.1	0.029	0.003
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	< 0.002	0.001	0.034	0.000	0.0024	0.0001	5.4	0.1	0.029	0.001
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	< 0.002	0.001	0.038	0.001	0.0025	0.0005	5.4	_	0.028	0.003
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.002	0.001	0.037	0.001	0.0025	0.0005	3.9	0.2	0.025	0.003
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.002	0.001	0.040	0.001	0.0024	0.0005	2.5	0.1	0.024	0.002
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.003	0.001	0.042	0.000	0.0029	0.0004	2.2	0.1	0.025	0.002
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.002	0.001	0.042	0.001	0.0025	0.0001	2.0	0.1	0.033	0.004
	SUGAR CREEK TRIBUTARIES	ARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	< 0.002	0.002	0.034	0.001	0.0022	0.0007	3.3	0.2	0.018	0.004
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	< 0.002	0.000	0.037	0.001	0.0018	0.0006	1.2			900.0
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	0.002	0.002	0.040	0.002	0.0022	0.0005	2.2	0.2	0.022	0.003

¹ More complete explanations of these are found in table 1.

 $^{^2\ {\}rm Location}$ is the position within the channel where the grab sample was collected.

Table A38. Field measurements for samples collected on the synoptic trip of April 2002.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; na, not available]

Site	Site Location ¹	Dist. ¹	Location	Date	Time	\circ	Hd	Temperature	Specific	Dissolved Oxygen
Name ¹		km				cms		ွ	Conductance	mg/L
									μS/cm	
	IROQUOIS RIVER									
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	7.87	5.65	544	13.7
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	7.92	6.30	564	13.4
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	7.76	5.64	554	10.3
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	7.90	5.93	559	13.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	7.96	90.9	564	15.4
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	7.92	6.16	999	15.4
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	7.93	7.58	999	14.7
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	7.97	6.92	565	15.1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	7.96	6.23	564	15.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	7.97	6.20	995	15.0
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	7.97	6.35	999	14.9
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	7.99	6.33	564	14.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	8.04	6.83	560	14.5
	SUGAR CREEK									
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	7.87	4.52	553	12.9
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	7.93	4.69	260	22.3
SC03	Highway 71 bridge, Ind.	8.6	COF	04/04/02	09:15	2.76	8.03	4.97	571	22.3
SC04	Stateline Rd. bridge, IllInd.	14.0	COF	04/04/02	10:25	5.15	8.17	5.22	597	12.9
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	8.14	5.74	576	7.7
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	8.26	5.32	601	7.1
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	8.32	5.30	965	8.6
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	8.32	5.13	865	7.0
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	8.35	5.05	009	8.9
	SUGAR CREEK TRIBUTAR	RIES								
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	06:50	2.13	8.13	4.99	624	19.3
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	8.31	4.43	969	7.8
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	8.39	4.86	610	9.7

¹ More complete explanations of these are found in table 1.

 $^{^{2}\ \}mathrm{Location}$ is the position within the channel where the grab sample was collected.

Table A39. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	NO_3	33	NO_2	2	NH_4		Kjeldahl N
Name ¹		km			mg N/L	T	I/N gm	T	mg N/L	V/L	mg N/L
					Median MAD	MAD	Median MAD	MAD	Median	MAD	Value
	DITCHES										
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	16.9	0.0	0.021	0.000	0.016	0.001	na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	12.1	0.1	0.009	0.002	0.022	0.001	0.23
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	11.9	0.2	0.008	0.001	0.022	0.001	0.19
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	11.9	0.1	0.009	0.001	0.024	0.003	0.26
MG01	MG01 Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	12.1	0.1	0.007	0.002	0.023	0.001	0.22
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	20.6	0.1	0.015	0.000	0.008	0.000	na
	TILE DRAINS										
TD01	Tile Drain on III. Highway 1	na	04/20/99	10:50	17.9	0.2	0.001	0.000	0.012	0.000	na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	17.4	9.0	0.003	0.000	0.024	0.003	0.34
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	7.6	0.1	< 0.002	0.002	0.016	0.001	0.16
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	10.1	0.0	0.002	0.000	0.012	0.002	0.14
	OTHER STREAMS										
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15	11:15	16.9	8.0	0.030	0.000	0.046	0.001	na

¹ More complete explanations of these are found in tables 1 and 2

Table A39. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

											Suspended
Site	Site Location ¹	Dist. ¹	Date	Time	PO_4	4	P		DOC	Ŋ	Sediment
Name ¹		km			mg P/L	7/ _C	mg/L	T	mg C/L	7/T	mg/L
					Median MAD	MAD	Avg	SD	Avg SD	SD	Value
	DITCHES										
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	90.0	0.00	0.036	0.004	1.8	0.0	na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.04	0.01	0.026	0.001	2.2	0.0	13
MG03		3.8	04/03/02	17:30	0.02	0.00	0.033	0.002	2.1	0.1	49
MG02		5.4	04/03/02	17:50	0.04	0.00	0.033	0.001	2.2	0.0	na
MG01		6.2	04/03/02	18:20	0.03	0.00	0.019	0.004	2.1	0.1	63
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99 15:30	15:30	0.05	0.02	0.006	0.002	1.3	0.1	na
	TILE DRAINS										
TD01	Tile Drain on III. Highway 1	na	04/20/99 10:50	10:50	0.02	0.01	0.015	0.015 0.002	1.5	0.2	na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.04	0.01	0.064	0.003	3.3	0.0	∞
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.03	0.01	0.012	0.002	1.9	0.0	9
TD02	Tile Drain @ MG02, Ind.	na	04/03/02 18:10	18:10	0.03	0.01	0.011	0.002	1.8	0.1	na
	OTHER STREAMS										
CO01	Coon Cr. @ mouth, III.	na	04/20/99 11:15	11:15	0.03	0.00	0.00 0.044 0.004 3.2	0.004	3.2	0.1	na

¹ More complete explanations of these are found in tables 1 and 2

Table A40. Concentrations of major ions in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Cl	SO_4	_	$HCO_3 + CO_3$	CO_3	E	Br
Name ¹		km			mg/L	mg/L	ب	mg C/L	T /	В'n	hg/L
					Avg SD Avg SD	Avg (SD	Avg	SD	Avg SD	SD
	DITCHES)	
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	25 na	36 na	na	40.1	0.0	6.2	0.4
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	26 0	46	0	48.7	0.7	8.3	0.7
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	29 1	50	1	48.3	0.7	7.8	0.5
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	29 0	50	0	47.5	0.2	7.7	0.7
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	27 1	47	0	47.1	0.2	6.7	0.1
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99 15:30	15:30	26 na	32	na	41.7	0.1	5.9	0.4
	TILE DRAINS										
TD01	Tile Drain on Ill. Highway 1	na	04/20/99 10:50	10:50	17 na	25	na	38.3	0.2	2.6	8.0
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	160 2	44	П	50.4	0.4	12	0
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	30 2	29	0	58.8	0.0	4.9	0.2
TD02	Tile Drain @ MG02, Ind.	na	04/03/02 18:10	18:10	25 0	22	0	49.7	1.7	4.3	1.0
	OTHER STREAMS										
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15	11:15	22 na	37 na	na	35.1	0.1	5.0	0.2

¹ More complete explanations of these are found in tables 1 and 2

Table A40. Concentrations of major ions in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; μg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Na	_	X		Mg	50	Ca		SiO_2	2
Name ¹		km			mg/L	Ţ	mg/L	T	mg/L	Г	mg/L	Γ	mg/L	Ţ
					Avg SD		Avg	SD	Avg	SD	Avg SD Avg SD		Avg SD	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	6.9	0.3	1.1	0.1	25	П	69	2	7.2	0.4
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	8.9	0.1	0.94	0.03	24	0	74	_	6.7	0.1
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	10	0	1.1	0.0	25	0	74	0	9.9	0.0
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	10	0	1.1	0.0	25	0	73	0	9.9	0.1
MG01	MG01 Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	7.8	0.1	0.91	0.04	25	0	74		9.9	0.1
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	5.7	0.2	9.0	0.0	27	1	74	3	6.7	0.4
	TILE DRAINS													
TD01	Tile Drain on III. Highway 1	na	04/20/99	10:50 4.1	4.1	0.1	0.3	0.0	27	_	59	_	8.5	0.3
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	78	0	1.2	0.0	59	0	96	_	9.7	0.1
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	6.7	0.1	0.43	0.01	26	_	78	_	8.3	0.1
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	3.2	0.1	0.34	0.01	22	0	71	0	9.9	0.1
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15 3.5	11:15		0.1	1.4	0.1	24	1	64	2	8.1	0.4

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

i	-	;	,	į					,		,		í	
Site	Site Location	Dist.	Date	Time	AI		As	S	P		Ва		Be	
Name ¹	_	km			µg/L	J	µg/L	T.	µg/L	. 1	µg/L		hg/L	
					Avg	SD	Avg	SD	Avg SD		Avg SD	Ü	Avg	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	2.2	0.1	0.31	0.05	31	1	36	1	0.009	0.003
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	1.1	0.1	0.31	0.00	25	_	37	0	9000	0.003
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	1.0	0.0	0.32	0.01	29	_	35	0	0.008	0.005
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	1.0	0.0	0.32	0.02	28	7	35	0	< 0.005	0.004
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02		0.88	0.05	0.31	0.01	23	0	35	0	< 0.005	0.005
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	1.7	0.1	0.14	0.02	20	2	34	2	0.009	0.005
	TILE DRAINS													
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	5.3	0.2	0.14	0.04	28	9	24	1	< 0.007	0.007
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	1.3	0.0	0.73	0.03	19	0	20	0	< 0.005	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.56	0.01	0.21	0.01	16	_	30	0	0.005	0.003
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.31	0.02	0.15	0.02	4	_	25	0	< 0.005	0.002
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	2.0	0.2	0.38	0.03	33	5	34	0	< 0.007	0.005

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist.	Date	Time	Bi		Сд		Ce		C	
Name ¹		km			µg/L		hg/L	. 1	µg/L	د	hg/L	,
					Avg	SD	Avg	SD	Avg	SD	Avg	SD
	DITCHES											
MG04	AG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.004	0.002	0.010	0.001	0.018	0.000	< 0.002	0.013
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0013	0.0019	< 0.009	0.001	0.016	0.001	0.091	0.031
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0010	0.0010	< 0.009	0.001	0.016	0.001	0.10	0.04
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	< 0.0008	0.0006	< 0.009	0.000	0.018	0.001	0.12	0.04
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	< 0.0008	0.0006	< 0.009	0.000	0.016	0.000	0.15	0.05
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.004	0.003	0.009	0.002	0.016	0.003	< 0.002	0.022
	TILE DRAINS											
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	< 0.001	0.001	0.008	900.0	0.014	0.002	< 0.002	0.017
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	< 0.0008	0.0001	< 0.009	0.000	0.021	0.000	0.099	0.027
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	< 0.0008	0.0013	< 0.009	0.001	0.0082	0.0002	0.072	0.035
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0054	0.0010	< 0.009	0.001	0.0058	0.0001	0.078	0.041
	OTHER STREAMS											
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	0.002	0.000	0.049	900.0	0.021	0.001	< 0.002	0.016

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Ç		CS		Cu	n	Ω	Dy	я	<u>.</u>
Name ¹		km			µg/L	ر	ηg/L	,	µg/L	/r	µg/L	/L	μg/L	/L
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	< 0.2	0.1	< 0.002	0.000	0.90	0.04	0.0042	0.0006	0.0025	0.0002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	< 0.3	0.2	< 0.01	0.00	0.42	0.01	0.0051	0.0005	0.0035	0.0006
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	< 0.3	0.1	< 0.01	0.00	0.42	0.00	0.0036	0.0002	0.0037	0.0000
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	< 0.3	0.2	< 0.01	0.00	0.42	0.03	0.0037	0.0001	0.0027	0.0005
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	< 0.3	0.2	< 0.01	0.00	0.45	90.0	0.0035	0.0001	0.0030	0.0007
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99 15:30	15:30	< 0.2	0.0	< 0.002	0.001	0.58	0.04	0.0029	0.0007	0.0020	0.0002
	TILE DRAINS													
TD01	Tile Drain on III. Highway 1	na	04/20/99	10:50	< 0.2	0.1	< 0.002	0.001	0.59	0.02	0.0033	0.0006	0.0020	0.0005
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	< 0.3	0.0	< 0.01	0.01	0.36	0.04	0.0050	0.0004	0.0039	0.0004
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	< 0.3	0.2	< 0.01	0.00	0.33	0.02	0.0033	0.0012	0.0024	0.0007
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	< 0.3	0.0	< 0.01	0.00	0.32	0.03	0.0023	0.0004	0.0016	0.0002
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15	11:15	< 0.2	0.1	< 0.002	0.000	1:1	0.0	0.0044	0.0008	0.0041	0.0012

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Eu	.	Fe	•	9	PS	Hg		H	Но
Name ¹		km			J/gµ	Ţ	/gn	Ţ	µg/L	/\rac{1}{2}	ng/L	<u>_</u> 1	µg/L	./L
					Avg	SD	Avg	SD	Avg	SD	Avg SD	SD	Avg	SD
	DITCHES													
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0003	0.0008	< 2	2	0.0029	0.0006	2.0	0.2	0.0009	0.0002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0006	0.0006	1.0	0.1	0.0053	0.0015	1.3	0.1	0.0000	0.0002
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0003	0.0007	1.0	9.0	0.0058	0.0010	0.7	0.1	0.0008	0.0000
MG02		5.4	04/03/02	17:50	0.0014	0.0023	1.0	0.0	0.0065	0.0011	8.0	0.1	0.0000	0.0000
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0015	0.0027	1.2	0.4	0.0057	0.0012	1.0	0.0	0.0008	0.0002
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0002	0.0010	< 2	2	0.0024	0.0007	1.1	0.2	0.0006	0.0002
	TILE DRAINS													
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0007	0.0004	< ×	2	0.0035	0.0007	< 0.3	0.3	0.0005	0.0001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0010	0.0028	3.2	0.4	0.0065	0.0000	2.6	0.2	0.0011	0.0002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0005	0.0017	< 0.7	0.5	0.0053	0.0008	9.0	0.1	0.0000	0.0002
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0008	0.0025	< 0.7	1.2	0.0041	9000.0	0.7	0.1	0.0005	0.0001
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	$11:15 < 0.0002 \ 0.0005$	0.0005	< 2	3	0.0042	0.0004	na	na	0.0013	0.0002

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	La	a	Li		Lu		Mn	l u	Mo		PN	
Name ¹		km			√gη	T	µg/L	. 1	J/gµ	Ţ	$\mu g/L$	T	µg/L	Ţ	µg/L	Ţ
					Avg	SD	Avg SD	SD	Avg	SD	Avg	SD	Avg SD	SD	Avg	SD
	DITCHES						•)					
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.013	0.001	1.7 ().1 (0.0005	0.0001	6.2	1.0	2.1	0.1	0.017	0.002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.017	0.001	1.9	0.0	2.0007	0.0002	4.8	0.1	1.8	0.0	0.019	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.016	0.001	2.2	0.0).0007	0.0002	4.7	0.0	2.0	0.0	0.018	0.001
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.017	0.000	2.2	0.0	9000.0	0.0001	5.9	0.0	2.0	0.0	0.021	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.016	0.000	2.1	0.0	9000.0	0.0002	4.9	0.1	1.9	0.1	0.019	0.001
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.014	0.001	1.8 (0.1 (0.0004	0.0001	3.5	9.0	2.0	0.0	0.014	0.003
	TILE DRAINS															
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.021	0.001	3.7 (_	0.0003	0.0001	0.07	0.02	1.8	0.1	0.021	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.024	0.001	2.9	0.1).0007	0.0001	1.8	0.0	2.3	0.0	0.027	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.019	0.001	1.7 (_	0.0005	0.0002	0.2	0.0	1.4	0.0	0.022	0.001
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.014	0.000	1.6	0.1	0.0002	0.0000	0.1	0.0	1.3	0.0	0.014	0.002
	OTHER STREAMS															
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	0.017	0.000	2.2).2 (0.2 0.0011	0.0002	6.1	1.1	2.3	0.0	0.020	0.002

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	ïZ		Pb		Pr	_	Rb	p	Re	e
Name	_	km			µg/L		µg/L		√gη	T	$\mu g/L$	T	T/gn	T
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	< 0.5 (3.5	0.017	0.004	0.0037	0.0002	0.24	0.01	0.0100	0.0005
MG04		1.0	04/03/02	17:15	< 0.8	0.7	0.013	0.001	0.0038	0.0001	0.21	0.00	0.0097	0.0003
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	< 0.8	5.2	0.009	0.002	0.0041	0.0004	0.27	0.00	0.0107	9000.0
MG02		5.4	04/03/02	17:50	8.0	0.1	0.010	0.002	0.0037	0.0002	0.27	0.00	0.0103	0.0002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	< 0.8	0.3 <	0.004	0.002	0.0037	0.0001	0.23	0.00	0.0101	0.0005
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	< 0.5 (0.5	0.020	0.003	0.0029	0.0001	0.19	0.00	0.0121	0.0007
	TILE DRAINS													
TD01	Tile Drain on III. Highway 1	na	04/20/99	10:50	< 0.5 (0.5	0.006	0.001	0.0049	0.0003	0.14	0.01	0.0101	0.0011
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	< 0.8	0.3	0.011	0.003	0.0058	0.0003	0.19	0.00	0.0170	0.0010
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	< 0.8	> 9.1	0.004	0.003	0.0044	0.0001	0.14	0.00	0.0074	0.0007
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	< 0.8	0.4	0.007	0.009	0.0032	0.0000	0.12	0.00	0.0098	0.0004
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	< 0.5 (9.0	0.034	0.003	0.0042	0.0002	0.27	0.01	0.0122	9000.0

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Sb	b b	Se		Sm	и	Sr		Та	
Name		km			$\mu g/L$	T	µg/L	ر	µg/L	T	$\mu g/L$	Ţ	T/gμ	. 1
					Avg	SD	Avg SD	SD	Avg	SD	Avg SD	SD	Avg	SD
	DITCHES													
MG04	AG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.091	0.007	1.0	0.0	0.0031	0.0003	127	3	< 0.01	0.01
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.078	0.001	1.2	0.1	0.0039	0.0009	140	0	< 0.0004	0.0001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.087	0.004	1.0	0.0	0.0038	0.0006	140	0	< 0.0004	0.0002
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.089	0.002	0.9	0.1	0.0040	0.0007	140	0	< 0.0004	0.0002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.088	0.003	1.1	0.0	0.0036	0.0003	140	0	< 0.0004	0.0001
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.064	0.018	1.0	0.1	0.0026	0.0006	133	2	< 0.01	0.01
	TILE DRAINS													
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.039	0.005	1.1	0.0	0.0037	0.0003	112	7	< 0.01	0.01
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.065	0.005	1.0	0.1	0.0057	0.0004	220	0	< 0.0004	0.0002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.050	0.002	0.8	0.1	0.0036	0.0005	120	0	< 0.0004	0.0000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.053	0.005	1.0	0.0	0.0024	0.0005	110	0	< 0.0004	0.0004
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15 0.103	0.103	0.009	1.4	0.0	0.0036	0.0003	128	2	< 0.01	0.01

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist.1	Date	Time	T	Tb	Te	6)	T	Th	Ti		II	
Name ¹		km			J/gµ	;/L	µg/L	T	3H	µg/L	µg/L	Ţ	µg/L	Ţ
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0006	0.0001	< 0.02	0.00	0.0010	0.0005	0.1	0.1	0.011	0.003
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0007	0.0001	0.022	0.004	0.0014	0.0002	< 0.4	0.2	0.005	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0007	0.0000	0.019	0.004	0.0027	0.0018	< 0.4	0.1	0.005	0.000
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0007	0.0001	0.021	0.002	0.0028	0.0011	< 0.4	0.2	0.005	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0005	0.0001	0.022	0.007	0.0020	0.0004	< 0.4	0.1	0.005	0.002
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0004	0.0001	< 0.02	0.01	0.0007	0.0002	< 0.1	0.1	0.007	0.001
	TILE DRAINS													
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0005		< 0.02	0.00	0.0010	0.0004	0.1	0.1	0.005	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0009	0.0001	0.014	0.005	0.0029	0.0003	< 0.4	0.1	< 0.003	0.000
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0006	0.0001	0.019	0.005	0.0016	0.0011	< 0.4	0.0	< 0.003	0.000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0005	0.0001	0.022	0.003	0.011	0.000	< 0.4	0.2	0.005	0.002
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, Ill.	na	04/20/99 11:15	11:15	0.0007	0.0000	< 0.02	0.01	0.0011	0.0001	0.1	0.0	0.011	0.003

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	T	Tm	U		>		M		Y	
Name ¹		km			hg/L	/L	$\mu g/L$	Ţ	µg/L	ر	hg/L	ر	gn	µg/L
					Avg	SD	Avg SD	SD	Avg	SD	Avg	SD	Avg	SD
	DITCHES													
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0005	0.0001	1.1	0.0	0.3	0.3	< 0.08	0.00	0.030	0.001
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0006	0.0001	1.5	0.0	0.3	0.0	< 0.002	0.001	0.042	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0006	0.0000	1.5	0.0	0.3	0.0	< 0.002	0.001	0.038	0.001
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0005	0.0002	1.5	0.0	0.3	0.0	< 0.002	0.001	0.039	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0004	0.0001	1.5	0.0	0.3	0.1	< 0.002	0.000	0.038	0.001
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0004	0.0001	1.2	0.0	< 0.2	0.1	< 0.08	0.03	0.022	0.000
	TILE DRAINS													
TD01	Tile Drain on III. Highway 1	na	04/20/99	10:50	0.0002	0.0001	1.0	0.0	< 0.2	0.1	< 0.08	0.03	0.023	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0005	0.0001	1.7	0.0	0.7	0.0	0.003	0.001	0.039	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0004	0.0001	1.2	0.0	0.2	0.0	< 0.002	0.000	0.031	0.001
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0002	0.0000	1.4	0.0	0.2	0.1	< 0.002	0.001	0.021	0.000
	OTHER STREAMS													
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99	11:15	0.0007	0.0001	1.3	0.0	0.3	0.1	< 0.08	0.04	0.033	0.001

 $^{\rm I}$ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Y	Yb	Zn	u	Z	Zr
Name ¹		km			hg/L	,/L	J/gµ	T	$\mu g/L$	T
					Avg	SD	Avg	SD	Avg	SD
	DITCHES									
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0043	0.0000	0.5	0.1	0.032	0.003
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0029	0.0001	11	0	0.046	0.011
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0031	0.0004	3.7	0.2	0.039	900.0
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0031	0.0002	2.4	0.1	0.036	0.002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0027	0.0005	5.0	0.2	0.026	0.003
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99 15:30 0.0020	15:30	0.0020	0.0002	0.4	0.2	0.014	0.003
	TILE DRAINS									
TD01	Tile Drain on III. Highway 1	na	04/20/99		10:50 0.0021	0.0002	2.6	0.1	0.012	0.003
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35 (0.0043	0.0007	2.0	0.1	0.039	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0023	0.0006	0.53	0.04	0.018	0.000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0009	0.0001	1.2	0.0	0.017	0.003
	OTHER STREAMS									
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15 0.0052 0.0003	11:15	0.0052	0.0003	4.2	0.0	0.0 0.054 0.007	0.007

¹ More complete explanations of these are found in tables 1 and 2

Table A42. Field measurements for miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site	Site Location ¹	Dist. ¹	Date	Time	Hd	Temperature	Specific	Dissolved Oxygen
Name ¹		km				°C	Conductance	mg/L
							μS/cm	
	DITCHES							
MG04	MG04 Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	na	na	na	na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	8.22	6.85	619	18.6
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	8.21	7.19	625	18.3
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	8.23	7.27	582	18.8
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	8.24	7.00	610	21.7
MR01	MR01 Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	na	na	na	na
	TILE DRAINS							
TD01	Tile Drain on III. Highway 1	na	04/20/99 10:50	10:50	na	na	na	na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	7.65	6.10	1079	16.3
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	8.07	6.04	618	17.5
TD02	Tile Drain @ MG02, Ind.	na	04/03/02 18:10	18:10	7.90	5.26	556	21.2
	OTHER STREAMS							
CO01	CO01 Coon Cr. @ mouth, III.	na	04/20/99 11:15	11:15	na	na	na	na

 $^{\rm I}$ More complete explanations of these are found in tables 1 and 2